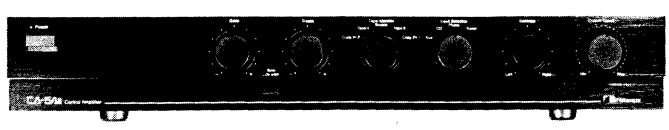
Nakamichi

Service Manual

Nakamichi

CA-5II
CA-5AII
CA-5EII
CA-50II

Control Amplifier



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1. GENERAL

1.1. Voltage Selector
Voltage selector is installed on the rear panel of the Nakamichi CA-5II (Other version).
This voltage selector can select either 120 V or 220—240 V at customer's disposal.

1.2. Package Ass'y, Accessory Ass'y and Parts List

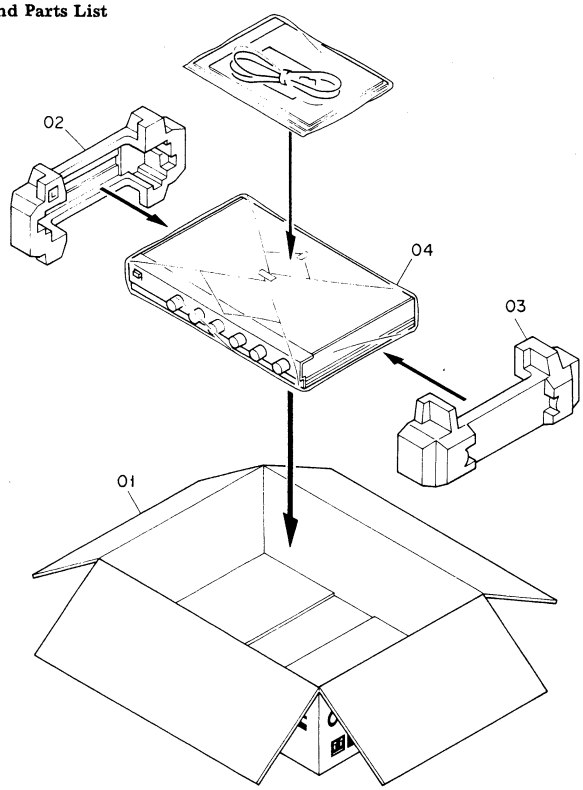


Fig. 1

Schematic Ref. No.	Part No.	Description	Q'ty
	FA03627A	Package Ass'y (CA-5II (Other & Saudi Arabia))	1
	FA03628A	Package Ass'y (CA-5II (Australia))	1
	FA03632A	Package Ass'y (CA-5AII (U.S.A.))	1
	FA03625A	Package Ass'y (CA-5AII (Canada))	1
	FA03629A	Package Ass'y (CA-5EII (Europe, Germany & Switzerland))	1
	FA03624A	Package Ass'y (CA-5EII (UK))	1
	FA03626A	Package Ass'y (CA-50II (Japan))	1
01	0F04081A	Carton Box CA-5II	1
	0F04082A	Carton Box CA-5AII	1
	0F04079A	Carton Box CA-5EII	1
	0F04080A	Carton Box CA-50II	1
02	0F03863A	Packing L	1
03	0F03864B	Packing R	1
04	0F03684A	Poly-Bag	1
—	0D04047A	User's Pack (CA-50II)	1
—	0D04616A	Amp. Warranty Card (CA-50II)	1
—	0M03457A	Voltage Label 240V (CA-5II (Australia) & CA-5EII (UK))	2
—	0M03642A	Voltage Label 220/240V (CA-5II (Other & Saudi Arabia))	2
—	0M05060A	Point of Sale Label (CA-50II)	1
	DA04109A	Accessory Ass'y (CA-5II (Other))	1
	DA04110A	Accessory Ass'y (CA-5II (Australia))	1
	DA04118A	Accessory Ass'y (CA-5II (Saudi Arabia))	1
	DA04114A	Accessory Ass'y (CA-5AII (U.S.A.))	1
	DA04107A	Accessory Ass'y (CA-5AII (Canada))	1
	DA04111A	Accessory Ass'y (CA-5EII (Europe, Germany & Switzerland))	1
	DA04106A	Accessory Ass'y (CA-5EII (UK))	1
	DA04108A	Accessory Ass'y (CA-50II)	1
	0B90229A	Power Cord (CA-5II (Saudi Arabia))	1
	0B90222A	Power Cord (CA-5AII (U.S.A.))	1
	0D03092B	Poly-Bag for Accessory	1
	0D04449A	Important Notice Card	1
	0D04766A	Catalogue (CA-5AII (U S.A.))	1
	0D04797A	Warranty Card (CA-5AII (Canada))	1
	0D04788A	Owner's Manual (Japanese)	1
	0D04789A	Owner's Manual (English, German, French))	1
	0D04790A	Owner's Manual (English)	1
	0D04791A	Supplement for Resistor Kits (CA-5II (Australia) & CA-5AII (U.S.A.))	1
	0D04792A	Supplement for Resistor Kits (CA-5II (Other & Saudi Arabia), CA-5AII (Canada) & CA-5EII)	1
	0D04793A	Supplement for Resistor Kits (CA-50II)	1
	0D04794A	Price Card (CA-50II)	1
	0D04796A	Tape Catalogue (CA-5AII (U.S.A.))	1
	0F03887A	Power Cord Band (CA-5II (Saudi Arabia))	1
	DA03873A	Warranty Card Ass'y (CA-5AII (U.S.A.), for 1st Version)	1
	0D04797A	Warranty Card Ass'y (CA-5AII (U.S.A.), for 2nd Version)	1
	DA04116A	Resistor Kits (Except for CA-50II (Consisting of the followings:)	2
	(0B20417A)	RK 3.16 1/2W F	(1)
	(0B20418A)	RK 11.5 1/2W F	(1)
	(0B20419A)	RK 26.1 1/2W F	(1)
	(0B20420A)	RK 42.2 1/2W F	(1)
	(0B20421A)	RK 100 1/2W G	(1)
	(0D04212A)	Poly-Bag	(1)
	DA04117A	Resistor Kits (CA-50II) (Consisting of the followings:)	2
	(0B20164A)	RK 3.16 1/2W G	(1)
	(0B20169A)	RK 11.5 1/2W G	(1)
	(0B20186A)	RK 26.1 1/2W G	(1)
	(0B20196A)	RK 42.2 1/2W G	(1)
	(0B20214A)	RK 100 1/2W G	(1)
	(0D04212A)	Poly-Bag	(1)

2. REMOVAL PROCEDURES

2.1. Top Cover Ass'y
Refer to Fig. 2.1.
(1) Unfasten F01 (M4x8 Hex. Socket Head Screws) by using a wrench and remove F02 (Top Cover Ass'y).

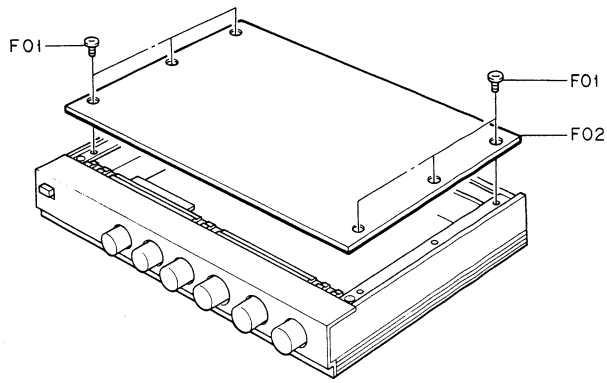


Fig. 2.1

2.2. Side Panel R and Side Panel L
Refer to Fig.2.2.
(1) Remove the Top Cover Ass'y referring to item 2.1.
(2) Unfasten F01, F02 and F03, and pull the front part of F04 (Side Panel R) to the right, then pull F04 (Side Panel R) forward to remove it.
(3) Unfasten F05, F06 and F07, and pull the front part of F08 (Side Panel L) to the left, then pull F08 (Side Panel L) forward to remove it.

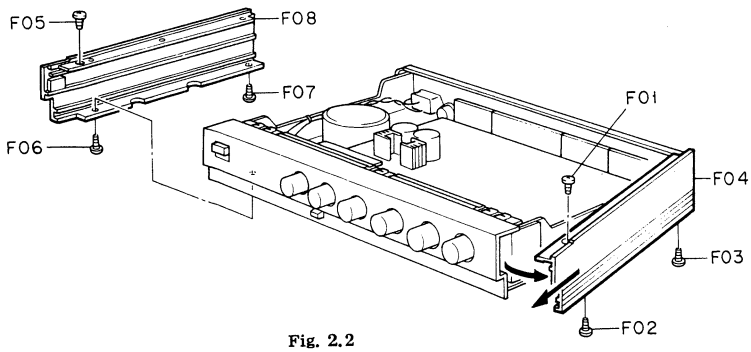


Fig. 2.2

2.3. Main P.C.B. Ass'y
Refer to Figs. 2.3.1 and 2.3.2.
(1) Remove the Side Panel R and Side Panel L referring to item 2.2.
(2) Unfasten F01, F02, F03 and F04.
(3) Cut F05 (Insu-Lock) with pliers.
(4) Lift F06 to gain access to the Main P.C.B. Ass'y.

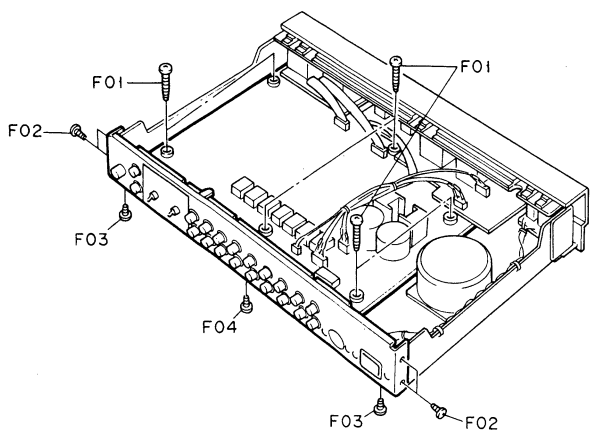


Fig. 2.3.1

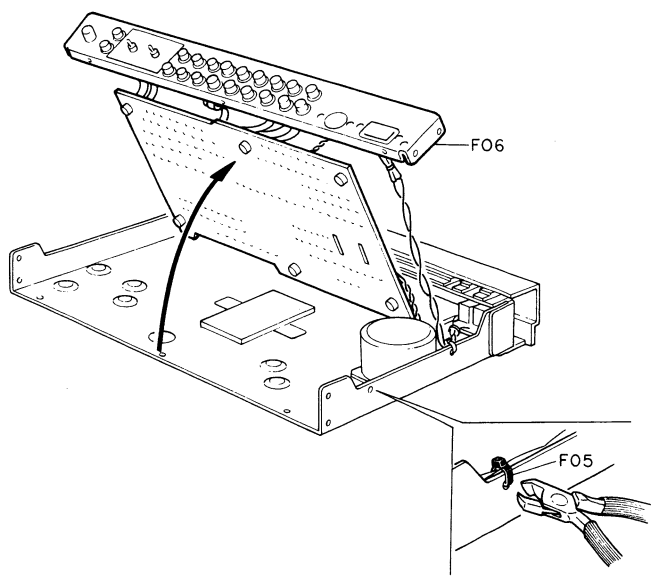


Fig. 2.3.2

2.4. Front Panel Ass'y

Refer to Fig. 2.4.

(1) Remove the Side Panel R and Side Panel L referring to item 2.2.
(2) Pull out F01 and unfasten F02, F03, F04 and F05.
(3) Disconnect F06 and remove F07 (Front Panel Ass'y).

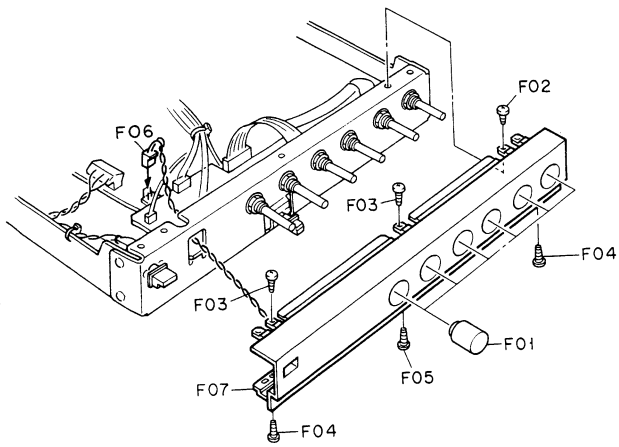


Fig. 2.4

2.5. Front Chassis and Tone Switch P.C.B. Ass'y

Refer to Figs. 2.5.1 and 2.5.2.

(1) Remove the Front Panel Ass'y referring to item 2.4.
(2) Unfasten F01, F02 and F03.
(3) Remove F04 (Front Chassis), pull out F05, unfasten F06, and disassemble F07 (Tone Switch P.C.B. Ass'y).

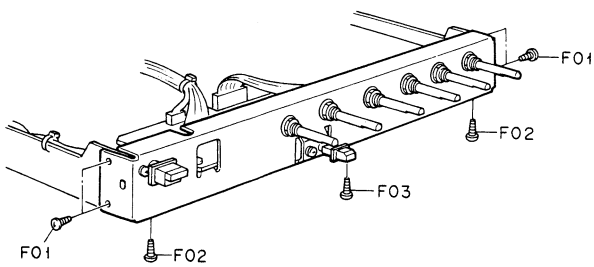


Fig. 2.5.1

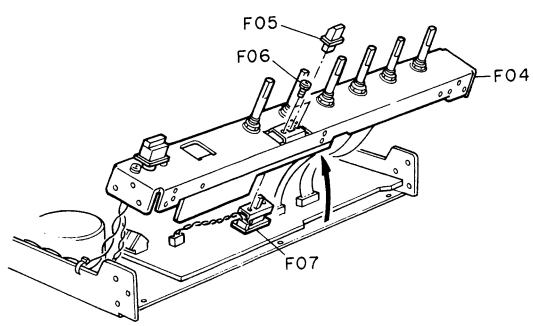


Fig. 2.5.2

3. PARTS LOCATION FOR ELECTRICAL ADJUSTMENT

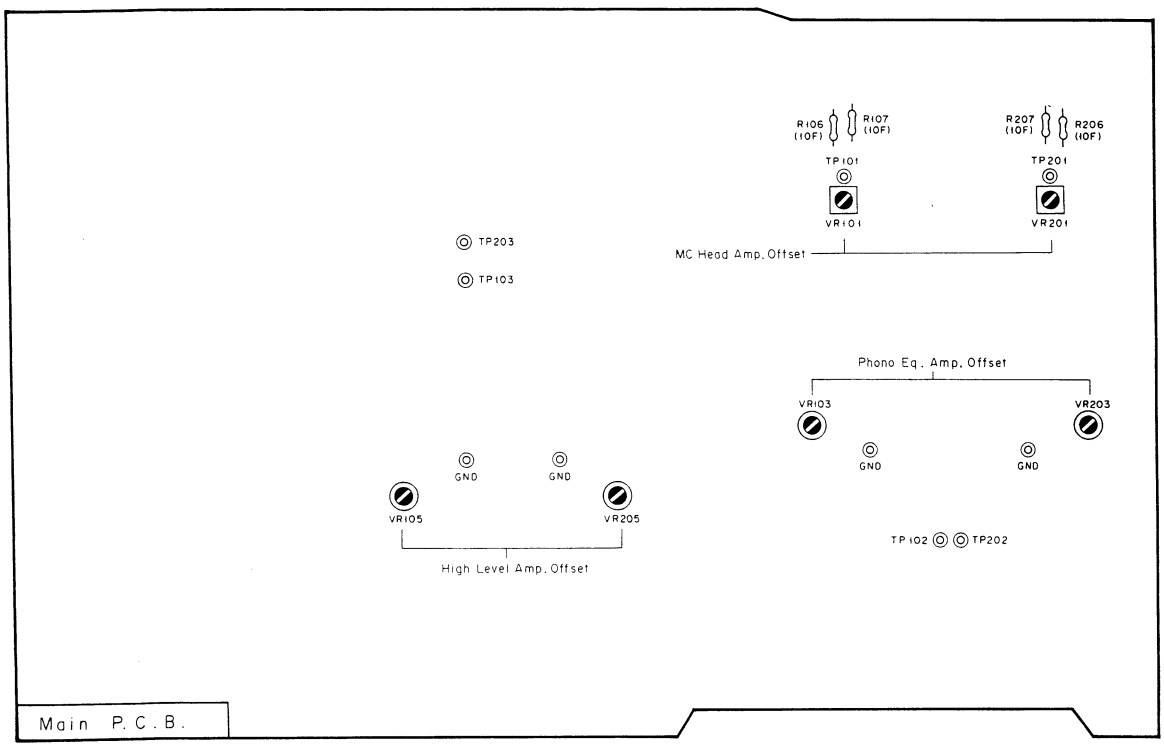


Fig. 3

4. ELECTRICAL ADJUSTMENTS

STEP	ITEM	OUTPUT CONNECTION	MODE	ADJUST-MENT	REMARKS
1	Preliminary Step		Output Level - Min. Input Selector - Phono Tone Switch - OFF Cartridge Selector - MM		1. Set the Control Amplifier as indicated in the MODE. 2. Remove all input/output signal cables from the Control Amplifier. 3. Turn ON the power and, with the Top Cover Ass'y installed, allow two minutes before adjusting. 4. Remove the Top Cover Ass'y referring to item 2.1.
2	MC Head Amp. Offset Adjustment	DC Voltmeter between TP101 (TP201) and GND on Main P.C.B.	Same as above	Main P.C.B. VR101 VR201 R107,R207 R106,R206	1. Adjust VR101 (VR201) to obtain 0 V ±2 mV on the DC voltmeter. 2. If satisfactory result is not obtained, short-circuit resistor R107 (R207) or R106 (R206) and re-adjust VR101 (VR201) once. R107 (R207): When reading in 1. exceeds 0 V +2 mV. R106 (R206): When reading in 1. is below 0 V -2 mV.
3	Phono Eq. Amp. Offset Adjustment	DC Voltmeter between TP102 (TP202) and GND on Main P.C.B.	Same as above	Main P.C.B. VR103 VR203	Adjust VR103 (VR203) to obtain 0 V ±1 mV on the DC voltmeter.
4	High Level Amp. Offset Adjustment	DC Voltmeter between TP103 (TP203) and GND on Main P.C.B.	Same as above	Main P.C.B. VR105 VR205	Adjust VR105 (VR205) to obtain 0 V ±1 mV on the DC voltmeter.

5. MECHANISM ASS'Y AND PARTS LIST

5.1. Synthesis

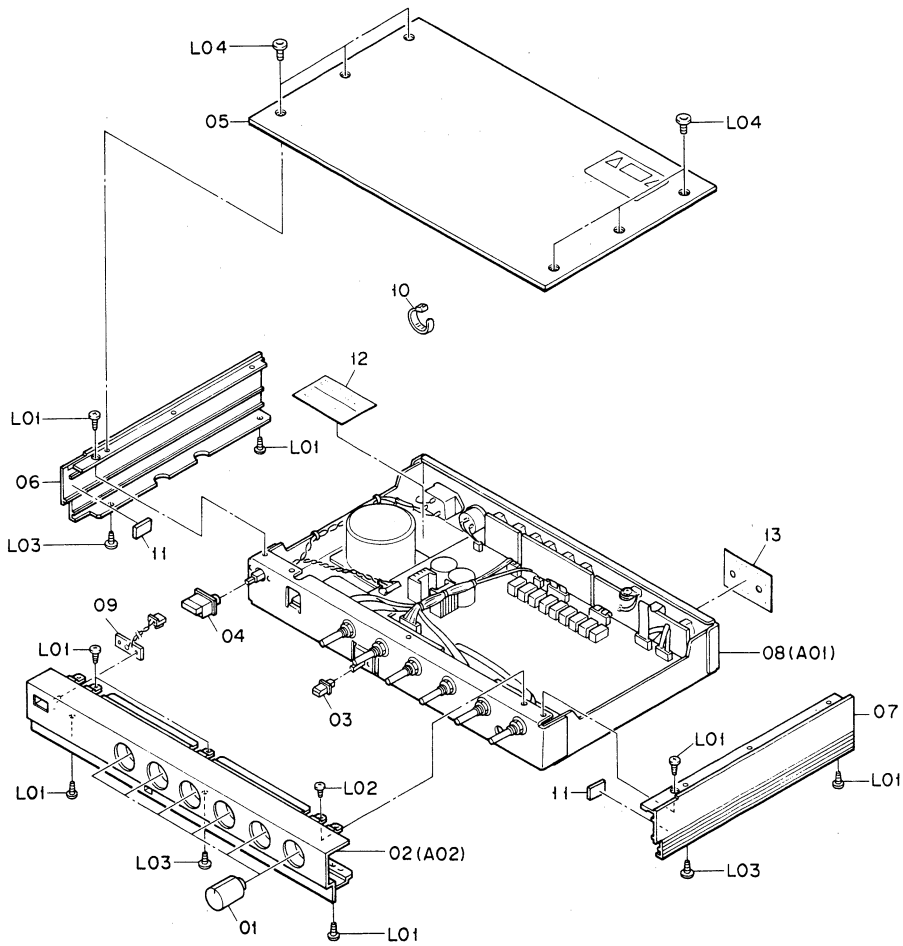


Fig. 5.1

Schematic Ref. No.	Part No.	Description	Q'ty
5.1. Synthesis			
		Synthesis	
		Serial No.: B10801001 -	
01	HA05126A	AFT Knob Ass'y	6
02	HA05325A	Front Panel Ass'y (CA-5II (Other, Australia & Saudi Arabia) & CA-5AII (Canada))	1
	HA05324A	Front Panel Ass'y (CA-5AII (U.S.A.))	1
	HA05326A	Front Panel Ass'y (CA-5EII)	1
	HA05327A	Front Panel Ass'y (CA-50II)	1
03	0H04643A	Push Button	1
04	HA04799B	Power Switch Button Ass'y	1
05	HA05336A	Top Cover Ass'y (Consisting of the followings:)	1
	(0H05153A)	Top Cover	(1)
	(0J05354A)	BS Damper TPJ	(1)
	(0J05409A)	Top Cover Cushion	(2)
	(0J05421A)	BS Damper F 20x20	(2)
	(0M04377B)	Caution Sheet	(1)
06	0H05150A	Side Panel L	1
07	0H05151C	Side Panel R	1
08	JA04326A	Chassis Ass'y (CA-5II (Other))	1
	JA04327A	Chassis Ass'y (CA-5II (Australia))	1
	JA04325A	Chassis Ass'y (CA-5II (Saudi Arabia))	1
	JA04324A	Chassis Ass'y (CA-5AII (U.S.A.))	1
	JA04323A	Chassis Ass'y (CA-5AII (Canada))	1
	JA04321A	Chassis Ass'y (CA-5EII (Europe & Germany))	1
	JA04328A	Chassis Ass'y (CA-5EII (Switzerland))	1
	JA04320A	Chassis Ass'y (CA-5II (UK))	1
	JA04322A	Chassis Ass'y (CA-50II)	1
09	BA06995A	Power LED P.C.B. Ass'y	1
10	0B08515A	Insu-Lock BK-1	1
11	0J05355A	BS Damper S 12x20	2
12	0M05062A	Fuse Caution (CA-5AII (Canada))	1
13	0M05072A	Caution Sheet (Except for CA-50II)	1
	0M05073A	Caution Sheet (CA-50II)	1
L01	0E00921A	BT3x8 ⊕ Binding (Black Chromate)	8
L02	0E03013A	BT3x5 ⊕ Binding	1
L03	0E03366A	BT3x8 ⊕ Binding Projected	3
L04	0E03431A	M4x8 Hex. Socket Head	6
—	0M03797A	Voltage Seal 240V (CA-5II (Australia) & CA-5EII (UK))	1
—	0M03844B	Power Cord Label (CA-5EII (UK))	2
—	0M03917A	Production Date Seal (CA-5AII (U.S.A.))	1
—	0M04660A	Voltage Seal (CA-5II (Other & Saudi Arabia))	1
—	0M05051A	Serial Number Seal	1
—	0M05052A	FTZ Label (CA-5EII (Germany))	1
—	0M05064A	EP Approval Label I (CA-5EII (Switzerland))	1
—	0M05093A	EP Approval Label J (CA-5EII (Europe & Germany))	1
—	MA01001A	F. Code Label Ass'y	1
—	MA01002A	Multi-Label Ass'y (CA-50II)	1
—	MA01003A	US Label Ass'y (CA-5AII (U.S.A.))	1

5.2. Chassis Ass'y (A01)

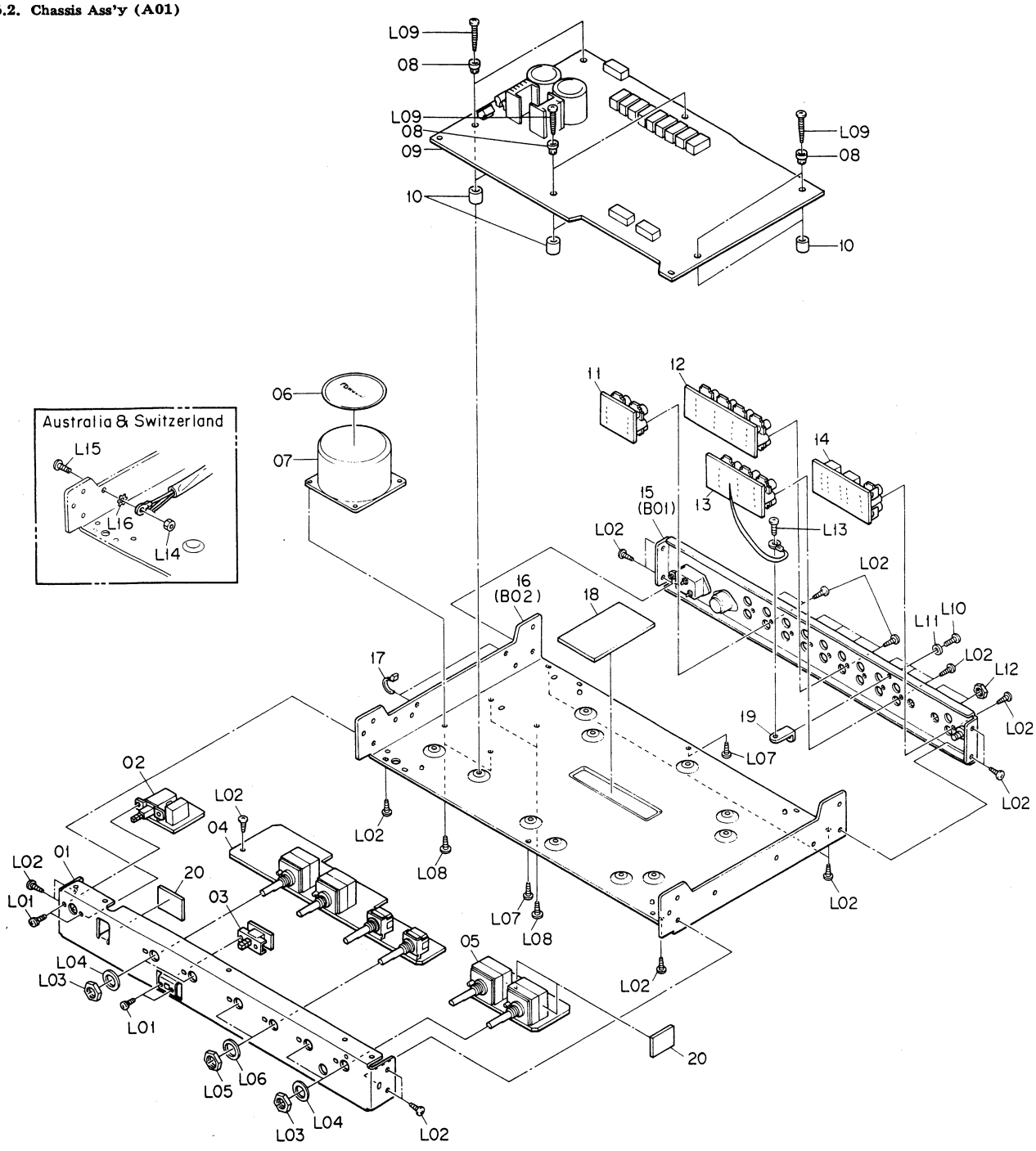


Fig. 5.2

Schematic Ref. No.	Part No.	Description	Q'ty
5.2. Chassis Ass'y (A01)			
A01	JA04326A	Chassis Ass'y (CA-5II (Other))	1
	JA04327A	Chassis Ass'y (CA-5II (Australia))	1
	JA04325A	Chassis Ass'y (CA-5II (Saudi Arabia))	1
	JA04324A	Chassis Ass'y (CA-5AII (U.S.A.))	1
	JA04323A	Chassis Ass'y (CA-5AII (Canada))	1
	JA04321A	Chassis Ass'y (CA-5EII (Europe & Germany))	1
	JA04328A	Chassis Ass'y (CA-5EII (Switzerland))	1
	JA04320A	Chassis Ass'y (CA-5EII (UK))	1
	JA04322A	Chassis Ass'y (CA-50II) Serial No.: B10801001 -	1
01	0J05408B	Front Chassis	1
02	BA06994A	Power Switch P.C.B. Ass'y (CA-5AII)	1
	BA07139A	Power Switch P.C.B. Ass'y (CA-5II (Other))	1
	BA07140A	Power Switch P.C.B. Ass'y (CA-5II (Australia & Saudi Arabia) & CA-5EII)	1
	BA07141A	Power Switch P.C.B. Ass'y (CA-50II)	1
03	BA06991A	Tone Switch P.C.B. Ass'y	1
04	BA06992A	Tone Control P.C.B. Ass'y	1
05	BA06993A	Volume P.C.B. Ass'y	1
06	0M04860A	Power Transformer Label	1
07	0B50107A	Power Transformer (CA-5II (Other & Saudi Arabia))	1
	0B50103A	Power Transformer (CA-5II (Australia) & CA-5EII (UK))	1
	0B50106A	Power Transformer (CA-5AII)	1
	0B50104A	Power Transformer (CA-5EII (Europe, Germany & Switzerland))	1
	0B50105A	Power Transformer (CA-50II)	1
08	0J05019A	Coller Bushing A	6
09	BA06986A	Main P.C.B. Ass'y (CA-5II (Other) & CA-5AII)	1
	BA07124A	Main P.C.B. Ass'y (CA-5EII (Germany))	1
	BA07123A	Main P.C.B. Ass'y (CA-5II (Australia & Saudi Arabia) & CA-5EII (Europe, Switzerland & UK))	1
	BA07125A	Main P.C.B. Ass'y (CA-50II)	1
10	0J05020A	Coller Bushing B	6
11	BA06989A	Pin Jack P.C.B. C Ass'y	1
12	BA06988A	Pin Jack P.C.B. B Ass'y (Except CA-5EII (Germany))	1
	BA07127A	Pin Jack P.C.B. B Ass'y (CA-5EII (Germany))	1
13	BA06987A	Pin Jack P.C.B. A Ass'y (Except CA-5EII (Germany))	1
	BA07126A	Pin Jack P.C.B. A Ass'y (CA-5EII (Germany))	1
14	BA06990A	Load Switch P.C.B. Ass'y (Except CA-5EII (Germany))	1
	BA07128A	Load Switch P.C.B. Ass'y (CA-5EII (Germany))	1
15	HA05334A	Rear Panel Ass'y (CA-5II (Other))	1
	HA05332A	Rear Panel Ass'y (CA-5II (Australia))	1
	HA05346A	Rear Panel Ass'y (CA-5II (Saudi Arabia))	1
	HA05329A	Rear Panel Ass'y (CA-5AII (U.S.A.))	1
	HA05330A	Rear Panel Ass'y (CA-5AII (Canada))	1
	HA05331A	Rear Panel Ass'y (CA-5EII (Europe & Germany))	1
	HA05337A	Rear Panel Ass'y (CA-5EII (Switzerland))	1
	HA05333A	Rear Panel Ass'y (CA-5EII (UK))	1
	HA05328A	Rear Panel Ass'y (CA-50II))	1
16	HA05335A	Main Chassis Ass'y	1
17	0B08515A	Insu-Lock BK-1 (CA-5II (Other & Australia), CA-5AII (Canada) & CA-5EII & CA-50II)	7
	0B08515A	Insu-Lock BK-1 (CA-5II (Saudi Arabia) & CA-5AII (U.S.A.))	8
18	0J05354A	BS Damper TPJ	1
19	0J05246A	Ground Bracket	1
20	0J05421A	BS Damper F 20x20	3
L01	0E00612A	M3x6 ⊕Pan (2A)	4
L02	0E00921A	BT3x8 ⊕Binding (Black Chromate)	23
L03	—	Nut for Volume	(4)
L04	—	Washer for Volume	(4)
L05	—	Nut for Function Switch	(2)
L06	—	Washer for Function Switch	(2)
L07	0E03366A	BT3x8 ⊕Binding Projected (Black Chromate)	2
L08	0E00915A	BT4x8 ⊕Binding (Black Chromate)	4
L09	0E03294A	BT3x18 ⊕Binding (Black Chromate)	6
L10	0E00594A	M3x8 ⊕Binding	1
L11	0E03406A	Washer 3.2x5.7x1.2 (Copper Black Chromate)	1
L12	—	Nut for Load Switch	(2)
L13	0E03395A	M3x8 ⊕Binding (Copper)	1
L14	0E00756A	M4x8 ⊕Binding (CA-5II (Australia) & CA-5EII (Switzerland))	1
L15	0E00669A	Nut Hex. M4 (CA-5II (Australia) & CA-5EII (Switzerland))	1
L16	0E00078A	Washer 4mm Toothed Lock (CA-5II (Australia) & CA-5EII (Switzerland))	1
—	0M03700A	Earth Mark Label (CA-5II (Australia) & CA-5EII (Switzerland))	1

5.3. Front Panel Ass'y (A02)

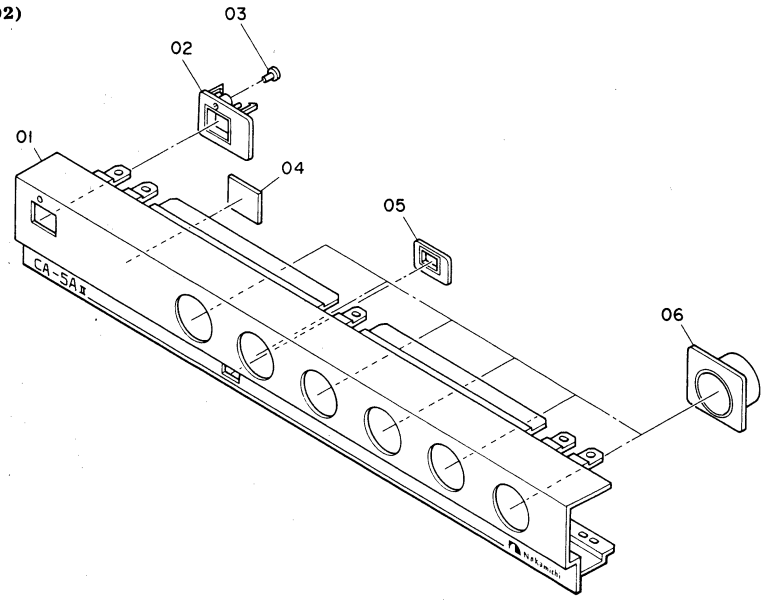
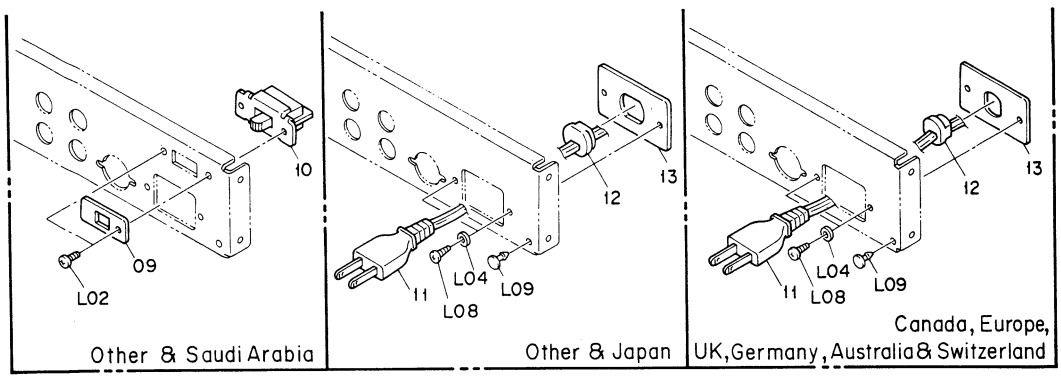


Fig. 5.3

5.4. Rear Panel Ass'y (B01)



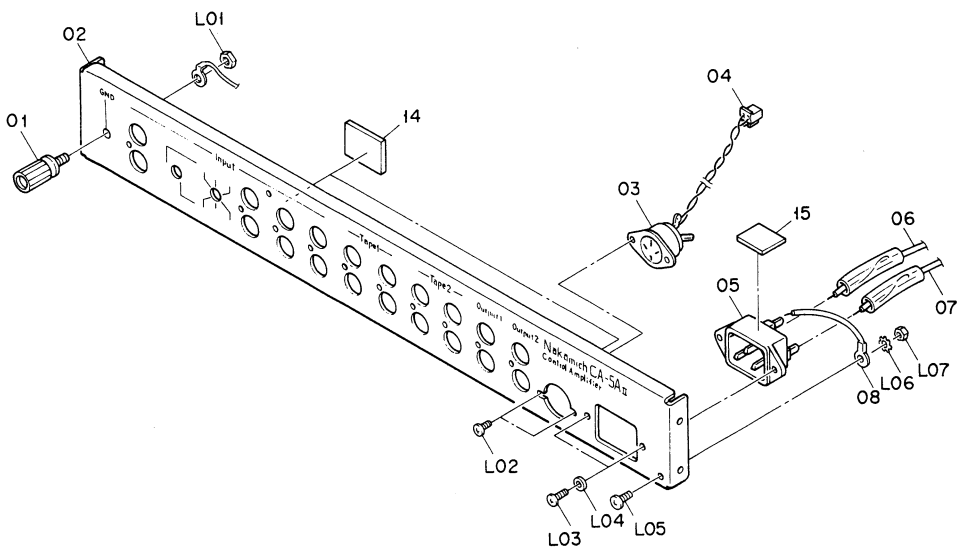


Fig. 5.4

Schematic Ref. No.	Part No.	Description	Q'ty
5.3. Front Panel Ass'y (A02)			
A02	HA05325A	Front Panel Ass'y (CA-5II & CA-5AII (Canada))	1
	HA05324A	Front Panel Ass'y (CA-5AII (U.S.A.))	1
	HA05326A	Front Panel Ass'y (CA-5EII)	1
	HA05327A	Front Panel Ass'y (CA-50II) Serial No.: B10801001 -	1
01	0H05156A	Front Panel (CA-5II & CA-5AII (Canada))	1
	0H05155A	Front Panel (CA-5AII (U.S.A.))	1
	0H05157A	Front Panel (CA-5EII)	1
	0H05158A	Front Panel (CA-50II)	1
02	0J05218A	Power Button Guide	1
03	0H04639B	Lens	1
04	0J05421A	BS Damper F 20x20	1
05	0H05154A	Push Button Guide	1
06	0H04648B	Volume Knob Holder	6
5.4. Rear Panel Ass'y (B01)			
B01	HA05334A	Rear Panel Ass'y (CA-5II (Other))	1
	HA05332A	Rear Panel Ass'y (CA-5II (Australia))	1
	HA05346A	Rear Panel Ass'y (CA-5II (Saudi Arabia))	1
	HA05329A	Rear Panel Ass'y (CA-5AII (U.S.A.))	1
	HA05330A	Rear Panel Ass'y (CA-5AII (Canada))	1
	HA05331A	Rear Panel Ass'y (CA-5EII (Europe & Germany))	1
	HA05337A	Rear Panel Ass'y (CA-5EII (Switzerland))	1
	HA05333A	Rear Panel Ass'y (CA-5EII (UK))	1
	HA05328A	Rear Panel Ass'y (CA-50II) Serial No.: B10801001 -	1
01	0B81685A	Ground Terminal T5435	1
02	0H05164B	Rear Panel (CA-5II (Other & Saudi Arabia))	1
	0H05161B	Rear Panel (CA-5II (Australia))	1
	0H05160B	Rear Panel (CA-5AII (U.S.A.))	1
	0H05223A	Rear Panel (CA-5AII (Canada))	1
	0H05162B	Rear Panel (CA-5EII)	1
	0H05159B	Rear Panel (CA-50II)	1
03	0B81372A	DIN Socket 3P	1
04	0B83108A	2P Connector	1
05	0B90087A	AC Inlet NC-173 (CA-5II (Saudi Arabia) & CA-5AII (U.S.A.))	1
06	0B83153A	AC Cord (White) (CA-5II (Saudi Arabia))	2
	0B83153A	AC Cord (White) (CA-5AII (U.S.A.))	1
07	0B83154A	AC Cord (Black) (CA-5II (Saudi Arabia))	2
	0B83154A	AC Cord (Black) (CA-5AII (U.S.A.))	1
08	0B80101A	Ground Cable with Lug Terminal (CA-5II (Saudi Arabia) & CA-5AII (U.S.A.))	1
09	0M03948A	Voltage Selector Lock Plate (CA-5II (Other & Saudi Arabia))	1
10	0B07092U	Voltage Selector ESD396 (CA-5II (Other & Saudi Arabia))	1
11	0B80085A	Power Cord (OFC) (CA-5II (Other) & CA-50II)	1
	0B80133B	Power Cord SA (CA-5II (Australia))	1
	0B80131A	Power Cord (OFC) (CA-5AII (Canada))	1
	0B80124A	Power Cord VDE (CA-5EII (Europe & Germany))	1
	0B80132B	Power Cord SV (CA-5EII (Switzerland))	1
	0B80134A	Power Cord BS (CA-5EII (UK))	1
12	0B90186A	Cord Bushing SR-33-1 (SPT-3) (CA-5II (Other) & CA-50II)	1
	0B90157A	Cord Bushing SR-6N-4 18/2 (CA-5II (Australia), CA-5AII (Canada) & CA-5EII)	1
13	0H05181A	Bushing Holder (CA-5II (Other) & CA-50II)	1
	0H04772A	Bushing Holder (CA-5II (Australia), CA-5AII (Canada) & CA-5EII)	1
14	0J05355A	BS Damper S 12x20	2
15	0J05355A	BS Damper S 12x20 (CA-5II Saudi Arabia) & CA-5AII (U.S.A.))	1
L01	—	Nut for Ground Terminal	(1)
L02	0E00985A	M3x6 ⊕ Binding (Black Chromate) (CA-5II (Australia), CA-5AII, CA-5EII & CA-50II)	2
	0E00985A	M3x6 ⊕ Binding (Black Chromate) (CA-5II (Other & Saudi Arabia))	4
L03	0E00594A	M3x8 ⊕ Binding (CA-5II (Saudi Arabia) & CA-5AII (U.S.A.))	2
L04	0E03406A	Washer 3.2x5.7x1.2 (Copper Black Chromate)	2
L05	0E00756A	M4x8 ⊕ Binding (CA-5II (Saudi Arabia) & CA-5AII (U.S.A.))	1
L06	0E00078A	Washer 4mm Toothed Lock (CA-5II (Saudi Arabia) & CA-5AII (U.S.A.))	1
L07	0E00669A	Nut Hex. M4 (CA-5II (Saudi Arabia) & CA-5AII (U.S.A.))	1
L08	0E00921A	BT3x8 ⊕ Binding (Black Chromate) (CA-5II (Other & Australia) & CA-5AII (Canada) & CA-5EII & CA-50II)	2
L09	0J05108A	Hole Plug (CA-5II (Other & Australia), CA-5AII (Canada), CA-5EII & CA-50II)	1
—	0M03700A	Earth Mark Label (CA-5II (Saudi Arabia) & CA-5AII (U.S.A.)	1

5.5. Main Chassis Ass'y (B02)

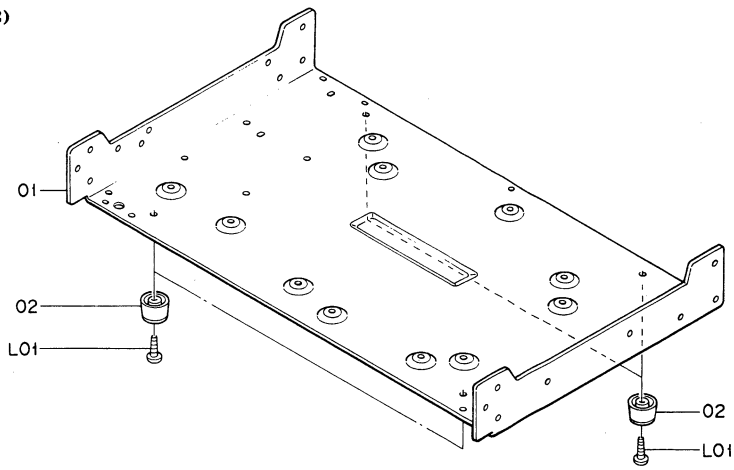


Fig. 5.5

Schematic Ref. No.	Part No.	Description	Q'ty
5.5. Main Chassis Ass'y (B02)			
B02	**HA05335A**	**Main Chassis Ass'y** Serial No.: B10801001 -	**1**
01	0H05152A	Main Chassis	1
02	0J05162A	Leg T-S	4
L01	0E00888A	BT3x12 ⊕ Binding	4

6. MOUNTING DIAGRAMS AND PARTS LIST

Notes: 1. Mounting diagram shows a dip side view of the printed circuit board.
2. Diode is 1SS53, 1S1555, or 1SS176 unless otherwise specified.
3. Following transistors are interchangeable with each other.
2SC945, 2SC536SP, 2SC2458, 2SC2785
4. Abbreviation for part name:
TR — Transistor, SiD — Silicon Diode, ZD — Zener Diode
RK — Carbon Resistor, RM — Metal Film Resistor, RF — Fail Safe Type Resistor
CE — Electrolytic Capacitor, CML — Mylar Capacitor, CC — Ceramic Capacitor, CPP — PP Capacitor,
CMM — Metalized Mylar Capacitor, CSP — Polystyrene Capacitor, C — Mica Capacitor

6.1. Power Switch P.C.B. Ass'y

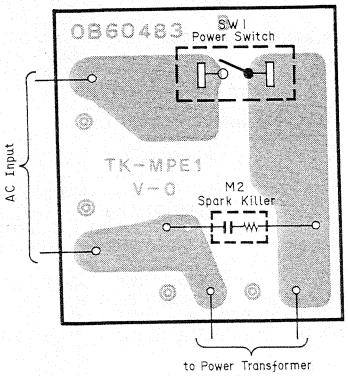


Fig. 6.1

6.2. Power LED P.C.B. Ass'y

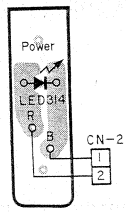


Fig. 6.2

6.3. Tone Switch P.C.B. Ass'y

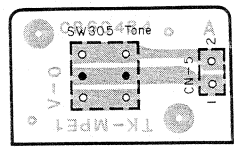


Fig. 6.3

Schematic Ref. No.	Part No.	Description
6.1. Power Switch P.C.B. Ass'y		
	BA06994A	**Power Switch P.C.B. Ass'y (CA-5AII)**
	BA07139A	**Power Switch P.C.B. Ass'y (CA-5II (Other))**
	BA07140A	**Power Switch P.C.B. Ass'y (CA-5II (Australia & Saudi Arabia) & CA-5EII)**
	BA07141A	**Power Switch P.C.B. Ass'y (CA-50II)**
	0B60483B	Power Switch P.C.B.
SW1	0B71006A	Power Switch SDL1P
M2	0B90232A	Spark Killer XE-473 (CA-5II & CA-5EII)
M2	0B08342A	Spark Killer ECQ-JC187C (CA-5AII)
M2	0B08363A	Spark Killer AU 120033 (CA-50II)
	0B90019A	Insu-Lock SKB8080x1.9 (4)
	0E00752A	Eyelet 2x3 (CA-5II (Australia & Saudi Arabia) & CA-5EII) (2)

Schematic Ref. No.	Part No.	Description
6.2. Power LED P.C.B. Ass'y		
	BA06995A	**Power LED P.C.B. Ass'y**
	0B60485A	Power LED P.C.B.
LED314	0B12215A	LED SLP202C Green
CN2	0B82816A	2P Connector
6.3. Tone Switch P.C.B. Ass'y		
	BA06991A	**Tone Switch P.C.B. Ass'y**
	0B60484A	Tone Switch P.C.B.
SW305	0B70118A	Push Switch
CN5	0B83106A	2P Connector

6.4. Pin Jack P.C.B. A Ass'y

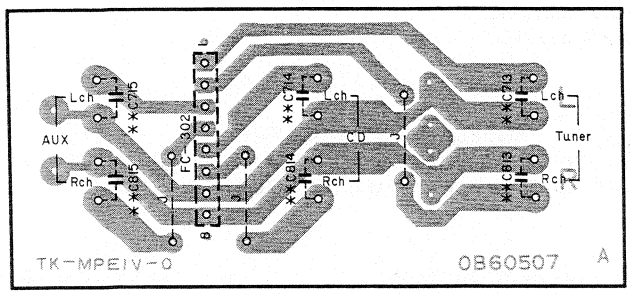


Fig. 6.4 **: CA-5EII (Germany) only.

6.5. Pin Jack P.C.B. B Ass'y

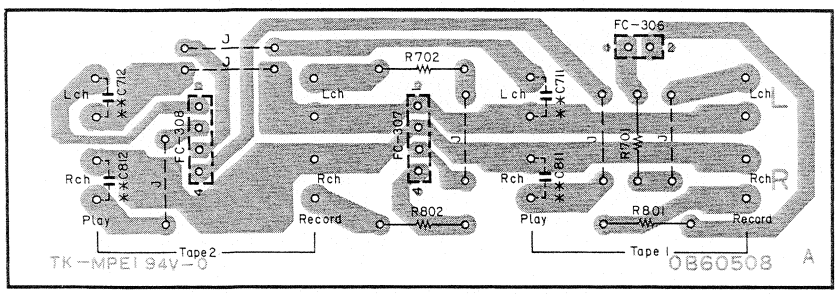


Fig. 6.5 **: CA-5EII (Germany) only.

6.6. Pin Jack P.C.B. C Ass'y

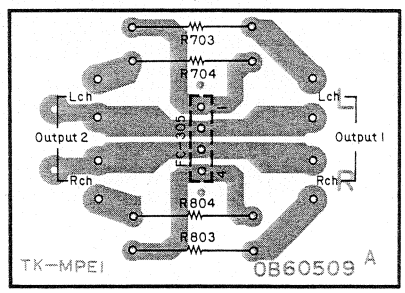


Fig. 6.6

Schematic Ref. No.	Part No.	Description
6.4. Pin Jack P.C.B. Ass'y		
	BA06987A	**Pin Jack P.C.B. A Ass'y (Except CA-5EII (Germany))**
	BA07126A	**Pin Jack P.C.B. A Ass'y (CA-5EII (Germany))**
	0B60507A	Pin Jack P.C.B. A
C713	0B41816A	CSP 220P 160V J (CA-5EII (Germany))
C714,715	0B41754A	CSP 150P 160V J (CA-5EII (Germany))
C813	0B41816A	CSP 220P 160V J (CA-5EII (Germany))
C814,815	0B41754A	CSP 150P 160V J (CA-5EII (Germany))
FC302	0B81019A	8P Dip Mate WH8D-1
	0B81374A	2P Pin Jack (3)
6.5. Pin Jack P.C.B. B Ass'y		
	BA06988A	**Pin Jack P.C.B. B Ass'y (Except CA-5EII (Germany))**
	BA07127A	**Pin Jack P.C.B. B Ass'y (CA-5EII (Germany))**
	0B60508A	Pin Jack P.C.B. B
R701,702	0B09491A	RM 1K 1/4W F
R801,802	0B09491A	RM 1K 1/4W F
C711,712	0B09844A	CML 1000P 50V J (CA-5EII (Germany))
C811,812	0B09844A	CML 1000P 50V J (CA-5EII (Germany))
FC306	0B81002A	2P Dip Mate WH2D-1
FC307,308	0B81011A	4P Dip Mate WH4D-1
	0B81374A	2P Pin Jack (4)
6.6. Pin Jack P.C.B. C Ass'y		
	BA06989A	**Pin Jack P.C.B. C Ass'y**
	0B60509A	Pin Jack P.C.B. C
R703,704	0B20422A	RK 470 1/2W G
R803,804	0B20422A	RK 470 1/2W G
FC305	0B81011A	4P Dip Mate WH4D-1
	0B81374A	2P Pin Jack (2)
6.7. Load Switch P.C.B. Ass'y		
	BA06990A	**Load Switch P.C.B. Ass'y (Except CA-5EII (Germany))**
	BA07128A	**Load Switch P.C.B. Ass'y (CA-5EII (Germany))**
	0B60510B	Load Switch P.C.B.
L701	0B51265A	Coil 30μH (CA-5EII (Germany))
L702	0B51266A	Coil 48μH (CA-5EII (Germany))
L801	0B51265A	Coil 30μH (CA-5EII (Germany))
L802	0B51266A	Coil 48μH (CA-5EII (Germany))
C701	0B41764A	CSP 100P 160V J
C702	0B41765A	CSP 200P 160V J
C709	0B41823A	CMM 0.01μ 50V J
C710	0B41764A	CSP 100P 160V J (CA-5EII (Germany))
C801	0B41764A	CSP 100P 160V J
C802	0B41765A	CSP 200P 160V J
C809	0B41823A	CMM 0.01μ 50V J
C810	0B41764A	CSP 100P 160V J (CA-5EII (Germany))
SW301	0B70120A	Toggle Switch 8J4022
SW302	0B70119A	Toggle Switch 8J4012
FC101	0B81014A	7P Dip Mate WH7D-1
FC201	0B81014A	7P Dip Mate WH7D-1
	0B81374A	2P Pin Jack (1)
	0J05414B	Spacer (1)

6.7. Load Switch P.C.B. Ass'y

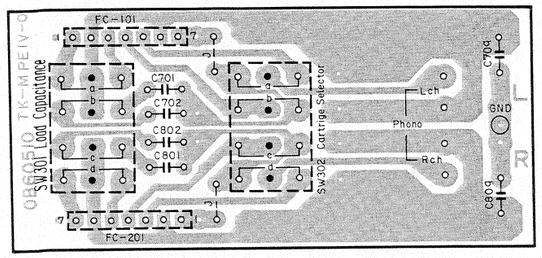


Fig. 6.7.1 Except for CA-5EII (Germany)

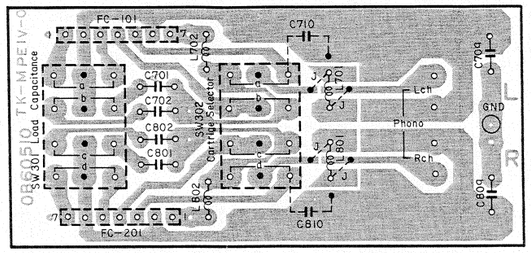


Fig. 6.7.2 For CA-5EII (Germany)

6.8. Volume P.C.B. Ass'y

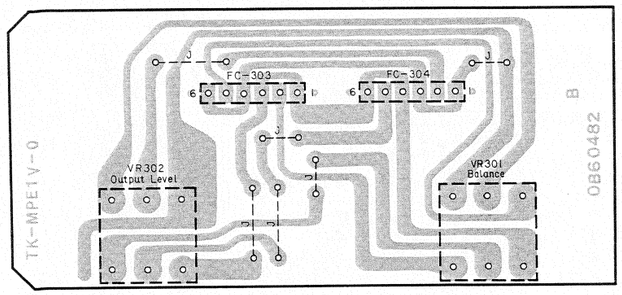


Fig. 6.8

6.9. Tone Control P.C.B. Ass'y

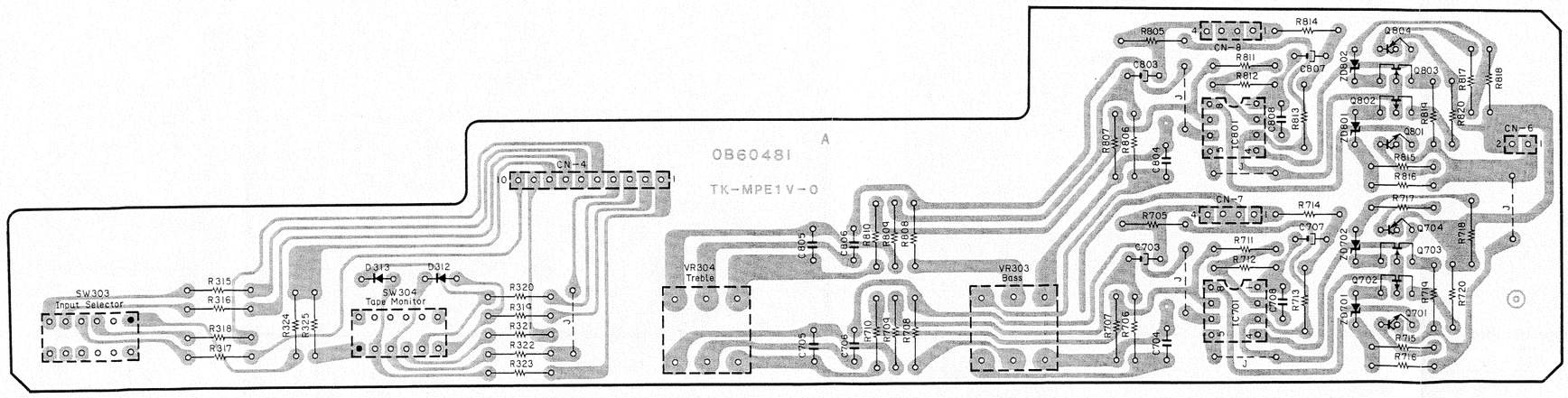
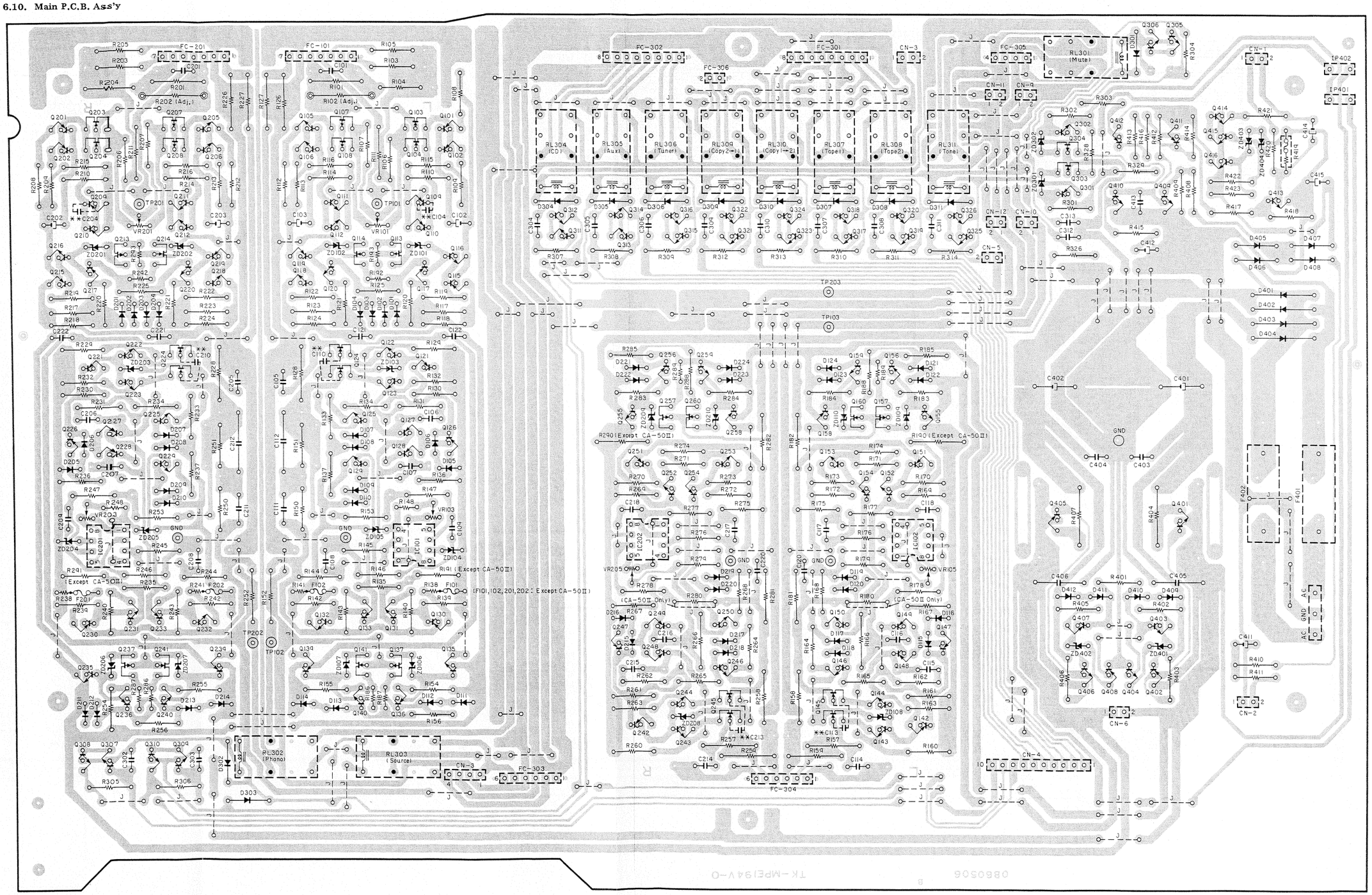


Fig. 6.9

Schematic Ref. No.	Part No.	Description
6.8. Volume P.C.B. Ass'y		
	BA06993A	**Volume P.C.B. Ass'y**
	0B60482B	Volume P.C.B.
VR301	0B30083A	VR 20KAx2
VR302	0B30084A	VR 50KAx2
FC303,304	0B81013A	6P Dip Mate
6.9. Tone Control P.C.B. Ass'y		
	BA06992A	**Tone Control P.C.B. Ass'y**
	0B60481A	Tone Control P.C.B.
IC701	0B11204A	IC NJM5532DD
IC801	0B11204A	IC NJM5532DD
Q701	0B06142A	TR 2SC2240 (BL)
Q702	0B10169A	FET 2SJ74 (BL)
Q703	0B10112A	FET 2SK170 (BL)
Q704	0B10050A	TR 2SA970 (BL)
Q801	0B06142A	TR 2SC2240 (BL)
Q802	0B10169A	FET 2SJ74 (BL)
Q803	0B10112A	FET 2SK170 (BL)
Q804	0B10050A	TR 2SA970 (BL)
ZD701,702	0B12183A	ZD 16V RD16JS-T1B2
ZD801,802	0B12183A	ZD 16V RD16JS-T1B2
D312,313	0B06398A	SiD 1SS176
VR303	0B30081A	VR 20KBx2
VR304	0B30082A	VR 100KBx2
R315,316	0B05776A	RK 1M 1/4W J
R317,318	0B05776A	RK 1M 1/4W J
R319,320	0B05776A	RK 1M 1/4W J
R321,322	0B05776A	RK 1M 1/4W J
R323	0B05776A	RK 1M 1/4W J
R324,325	0B05625A	RK 220K 1/4W J
R705	0B09305A	RM 100K 1/4W F
R706,707	0B22669A	RM 7.50K 1/4W F
R708	0B25489A	RM 16.2K 1/4W F
R709,710	0B22669A	RM 7.50K 1/4W F
R711,712	0B09491A	RM 1K 1/4W F
R713	0B09305A	RM 100K 1/4W F
R714	0B22567A	RM 100 1/4W F
R715	0B09547A	RM 2.21K 1/4W F
R716	0B22729A	RM 10.0K 1/4W F
R717	0B09547A	RM 2.21K 1/4W F
R718	0B22729A	RM 10.0K 1/4W F
R719,720	0B09427A	RM 5.62K 1/4W F
R805	0B09305A	RM 100K 1/4W F
R806,807	0B22669A	RM 7.50K 1/4W F
R808	0B25489A	RM 16.2K 1/4W F
R809,810	0B22669A	RM 7.50K 1/4W F
R811,812	0B09491A	RM 1K 1/4W F
R813	0B09305A	RM 100K 1/4W F
R814	0B22567A	RM 100 1/4W F
R815	0B09547A	RM 2.21K 1/4W F
R816	0B22729A	RM 10.0K 1/4W F
R817	0B09547A	RM 2.21K 1/4W F
R818	0B22729A	RM 10.0K 1/4W F
R819,820	0B09427A	RM 5.62K 1/4W F
C703	0B40376A	CE 10μ 16V (LN)
C704	0B41819A	CMM 0.18μ 50V
C705	0B41816A	CSP 220P 160V J
C706	0B41817A	CSP 510P 160V J
C707	0B40376A	CE 10μ 16V (LN)
C708	0B41817A	CSP 510P 160V J
C803	0B40376A	CE 10μ 16V (LN)
C804	0B41819A	CMM 0.18μ 50V J
C805	0B41816A	CSP 220P 160V J
C806	0B41817A	CSP 510P 160V J
C807	0B40376A	CE 10μ 16V (LN)
C808	0B41817A	CSP 510P 160V J
SW303	0B70047A	Rotary Switch 4P
SW304	0B70117A	Rotary Switch 5P
CN4	0B83105A	10P Connector
CN6	0B83107A	2P Connector Ass'y
CN7	0B83103A	Tone L Cord Ass'y
CN8	0B83104A	Tone R Cord Ass'y

6.10. Main P.C.B. Ass'y



**: CA-5EII (Germany) only.

Fig. 6.10

Schematic Ref. No.	Part No.	Description
6.10. Main P.C.B. Ass'y		
	BA06986A	**Main P.C.B. Ass'y (CA-5II (Other) & CA-5AII)**
	BA07123A	**Main P.C.B. Ass'y (CA-5II (Australia & Saudi Arabia) & CA-5EII (Europe, Switzerland & UK))**
	BA07124A	**Main P.C.B. Ass'y (CA-5EII (Germany))**
	BA07125A	**Main P.C.B. Ass'y (CA-50II)**
	— MC Amp. —	
Q101,102	0B10050A	TR 2SA970 (BL)
Q103,104	0B10170A	FET 2SK147 (BL)
Q105,106	0B06142A	TR 2SC2240 (BL)
Q107,108	0B10173A	FET 2SJ72 (BL)
Q109,110	0B10050A	TR 2SA970 (BL)
Q111,112	0B06142A	TR 2SC2240 (BL)
Q113	0B10169A	FET 2SJ74 (BL)
Q114	0B10112A	FET 2SK170 (BL)
Q115	0B10214A	TR 2SA817A
Q116	0B06142A	TR 2SC2240 (BL)
Q117	0B10050A	TR 2SA970 (BL)
Q118	0B10215A	TR 2SC1627A
Q119	0B10050A	TR 2SA970 (BL)
Q120	0B06142A	TR 2SC2240 (BL)
Q201,202	0B10050A	TR 2SA970 (BL)
Q203,204	0B10170A	FET 2SK147 (BL)
Q205,206	0B06142A	TR 2SC2240 (BL)
Q207,208	0B10173A	FET 2SJ72 (BL)
Q209,210	0B10050A	TR 2SA970 (BL)
Q211,212	0B06142A	TR 2SC2240 (BL)
Q213	0B10169A	FET 2SJ74 (BL)
Q214	0B10112A	FET 2SK170 (BL)
Q215	0B10214A	TR 2SA817A
Q216	0B06142A	TR 2SC2240 (BL)
Q217	0B10050A	TR 2SA970 (BL)
Q218	0B10215A	TR 2SC1627A
Q219	0B10050A	TR 2SA970 (BL)
Q220	0B06142A	TR 2SC2240 (BL)
ZD101,102	0B12170A	ZD 11V RD11JS-T1B1
ZD201,202	0B12170A	ZD 11V RD11JS-T1B1
D101,102	0B06398A	SiD 1SS176
D103,104	0B06398A	SiD 1SS176
D201,202	0B06398A	SiD 1SS176
D203,204	0B06398A	SiD 1SS176
VR101	0B32100A	Semi VR 100 RK502H101H0
VR201	0B32100A	Semi VR 100 RK502H101H0
R101	0B20214A	RK 100 1/2W G
R103	0B20162A	RK 2.7 1/2W G
R104,105	0B20165A	RK 8.2 1/2W G
R106,107	0B22666A	RM 10 1/4W F
R108,109	0B09891A	RM 80.6 1/4W F
R110	0B09829A	RM 3.32K 1/4W F
R111	0B20393A	RK 130 1/2W G
R112,113	0B09891A	RM 80.6 1/4W F
R114	0B09829A	RM 3.32K 1/4W F
R115,116	0B22756A	RM 90.9 1/4W F
R117,118	0B22639A	RM 681 1/4W F
R119	0B09491A	RM 1K 1/4W F
R120,121	0B09760A	RM 332 1/4W F
R122	0B09491A	RM 1K 1/4W F
R123,124	0B22639A	RM 681 1/4W F
R125	0B09305A	RM 100K 1/4W F
R192,193	0B22263A	RM 2.10K 1/6W F
R201	0B20214A	RK 100 1/2W G
R203	0B20162A	RK 2.7 1/2W G
R204,205	0B20165A	RK 8.2 1/2W G
R206,207	0B22666A	RM 10 1/4W F
R208,209	0B09891A	RM 80.6 1/4W F
R210	0B09829A	RM 3.32K 1/4W F
R211	0B20393A	RK 130 1/2W G
R212,213	0B09891A	RM 80.6 1/4W F
R214	0B09829A	RM 3.32K 1/4W F
R215,216	0B22756A	RM 90.9 1/4W F
R217,218	0B22639A	RM 681 1/4W F
R219	0B09491A	RM 1K 1/4W F
R220,221	0B09760A	RM 332 1/4W F
R222	0B09491A	RM 1K 1/4W F
R223,224	0B22639A	RM 681 1/4W F
R225	0B09305A	RM 100K 1/4W F
R292,293	0B22263A	RM 2.10K 1/6W F
C101	0B41765A	CSP 200P 160V J
C102,103	0B40468A	CE 220μ 10V (LN)
C104	0B41764A	CSP 100P 160V J (CA-5EII (Germany))
C121,122	0B41820A	CMM 0.1μ 50V J
C201	0B41765A	CSP 200P 160V J
C202,203	0B40468A	CE 220μ 10V (LN)
C204	0B41764A	CSP 100P 160V J (CA-5EII (Germany))
C221,222	0B41820A	CMM 0.1μ 50V J
	0B81648A	Terminal AT-1-3 (4) (For R102, R202)
	— Eq. Amp. —	
IC101	0B11253A	IC μPC811C
IC201	0B11253A	IC μPC811C
Q121	0B10050A	TR 2SA970 (BL)
Q122,123	0B06142A	TR 2SC2240 (BL)
Q124	0B10188A	FET 2SK240 (BL)
Q125	0B06142A	TR 2SC2240 (BL)
Q126,127	0B10050A	TR 2SA970 (BL)
Q128	0B10050A	TR 2SA970 (BL)
Q129	0B06142A	TR 2SC2240 (BL)
Q130	0B10204A	TR 2SA1145 (O,Y)
Q131	0B06142A	TR 2SC2240 (BL)
Q132	0B10205A	TR 2SC2705 (O,Y)
Q133	0B10050A	TR 2SA970 (BL)
Q135	0B10215A	TR 2SC1627A
Q136	0B10050A	TR 2SA970 (BL)
Q137	0B10169A	FET 2SJ74 (BL)
Q139	0B10214A	TR 2SA817A
Q140	0B06142A	TR 2SC2240 (BL)
Q141	0B10112A	FET 2SK170 (BL)
Q221	0B10050A	TR 2SA970 (BL)
Q222,223	0B06142A	TR 2SC2240 (BL)
Q224	0B10188A	FET 2SK240 (BL)
Q225	0B06142A	TR 2SC2240 (BL)
Q226,227	0B10050A	TR 2SA970 (BL)
Q228	0B10050A	TR 2SA970 (BL)
Q229	0B06142A	TR 2SC2240 (BL)
Q230	0B10204A	TR 2SA1145 (O,Y)
Q231	0B06142A	TR 2SC2240 (BL)
Q232	0B10205A	TR 2SC2705 (O,Y)
Q233	0B10050A	TR 2SA970 (BL)
Q235	0B10215A	TR 2SC1627A
Q236	0B10050A	TR 2SA970 (BL)
Q237	0B10169A	FET 2SJ74 (BL)
Q239	0B10214A	TR 2SA817A
Q240	0B06142A	TR 2SC2240 (BL)
Q241	0B10112A	FET 2SK170 (BL)
ZD103	0B12168A	ZD 10V RD10JS-T1B2
ZD104,105	0B12180A	ZD 15V RD15JS-T1B2
ZD106,107	0B12197A	ZD 27V RD27JS-T1B1
ZD203	0B12168A	ZD 10V RD10JS-T1B2
ZD204,205	0B12180A	ZD 15V RD15JS-T1B2
ZD206,207	0B12197A	ZD 27V RD27JS-T1B1
D105,106	0B06398A	SiD 1SS176
D107,108	0B06398A	SiD 1SS176
D109,110	0B06398A	SiD 1SS176
D111,112	0B06398A	SiD 1SS176
D113,114	0B06398A	SiD 1SS176
D205,206	0B06398A	SiD 1SS176
D207,208	0B06398A	SiD 1SS176
D209,210	0B06398A	SiD 1SS176
D211,212	0B06398A	SiD 1SS176
D213,214	0B06398A	SiD 1SS176
VR103	0B32023A	Semi VR 22K H0621A Metal
VR203	0B32023A	Semi VR 22K H0621A Metal
R126	0B20344A	RK 51.1K 1/2W G
R127	0B20214A	RK 100 1/2W G
R128	0B20158A	RK 274 1/2W F
R129	0B22697A	RM 511 1/4W F
R130	0B09491A	RM 1K 1/4W F
R131	0B22702A	RM 27.4 1/4W F
R132	0B22697A	RM 511 1/4W F
R133	0B22703A	RM 61.9 1/4W F
R134	0B22708A	RM 45.3K 1/4W F
R135	0B20424A	RK 1.00K 1/4W F (Except CA-50II)
R135	0B20262A	RK 1K 1/2W G (CA-50II)
R136	0B22567A	RM 100 1/4W F
R137	0B22705A	RM 226 1/4W F
R138	0B22690A	RM 39.2 1/4W F
R139,140	0B09760A	RM 332 1/4W F
R141	0B22690A	RM 39.2 1/4W F
R142,143	0B09760A	RM 332 1/4W F
R144,145	0B09502A	RM 1M 1/4W F
R146	0B09502A	RM 1M 1/4W F
R147	0B09523A	RM 13.7K 1/4W F
R148	0B25212A	RM 1.50K 1/4W F
R150	0B20395A	RM 12.4K 1/2W F
R151	0B20423A	RK 150K 1/2W F (Except CA-50II)
R151	0B20161A	RK 147K 1/2W G (CA-50II)
R152	0B20214A	RK 100 1/2W G
R153	0B09523A	RM 13.7K 1/4W F
R154,155	0B22642A	RM 221 1/4W F
R156	0B09305A	RM 100K 1/4W F
R186,187	0B22263A	RM 2.10K 1/6W F
R191	0B20425A	RK 25.5K 1/4W F (Except CA-50II)
R226	0B20344A	RK 51.1K 1/2W G
R227	0B20214A	RK 100 1/2W G
R228	0B20158A	RK 274 1/2W F
R229	0B22697A	RM 511 1/4W F
R230	0B09491A	RM 1K 1/4W F
R231	0B22702A	RM 27.4 1/4W F
R232	0B22697A	RM 511 1/4W F
R233	0B22703A	RM 61.9 1/4W F
R234	0B22708A	RM 45.3K 1/4W F
R235	0B20424A	RK 1.00K 1/4W F (Except CA-50II)
R235	0B20262A	RK 1K 1/2W G (CA-50II)
R236	0B22567A	RM 100 1/4W F
R237	0B22705A	RM 226 1/4W F
R238	0B22690A	RM 39.2 1/4W F
R239,240	0B09760A	RM 332 1/4W F
R241	0B22690A	RM 39.2 1/4W F
R242,243	0B09760A	RM 332 1/4W F
R244,245	0B09502A	RM 1M 1/4W F
R246	0B09502A	RM 1M 1/4W F
R247	0B09523A	RM 13.7K 1/4W F
R248	0B25212A	RM 1.50K 1/4W F
R250	0B20395A	RK 12.4K 1/2W F
R251	0B20423A	RK 150K 1/2W F (Except CA-50II)
R251	0B20161A	RK 147K 1/2W G (CA-50II)
R252	0B20214A	RK 100 1/2W G
R253	0B09523A	RM 13.7K 1/4W F
R254,255	0B22642A	RM 221 1/4W F
R256	0B09305A	RM 100K 1/4W F
R286,287	0B22263A	RM 2.10K 1/6W F
R291	0B20425A	RK 25.5K 1/4W F (Except CA-50II)
C105	0B41764A	CSP 100P 160V J
C106	0B41767A	CSP 0.01μ 160V J
C107	0B41764A	CSP 100P 160V J
C108	0B41822A	CMM 0.47μ 50V J
C109	0B41821A	CMM 0.22μ 50V J
C110	0B41764A	CSP 100P 160V J (CA-5EII (Germany))
C111	0B41698A	CPP 6200P 100V F
C112	0B41699A	CPP 0.022μ 100V F
C205	0B41764A	CSP 100P 160V J
C206	0B41767A	CSP 0.01μ 160V J
C207	0B41764A	CSP 100P 160V J
C208	0B41822A	CMM 0.47μ 50V J
C209	0B41821A	CMM 0.22μ 50V J
C210	0B41764A	CSP 100P 160V J (CA-5EII (Germany))
C211	0B41698A	CPP 6200P 100V F
C212	0B41699A	CPP 0.022μ 100V F
TF101,102	0B08715A	Thermal Fuse 129 EYP-2AS129 (Except CA-50II)
TF201,202	0B08715A	Thermal Fuse 129 EYP-2AS129 (Except CA-50II)
	— Line Amp. —	
IC102	0B11253A	IC μPC811C
IC202	0B11253A	IC μPC811C
Q142	0B10050A	TR 2SA970 (BL)
Q143,144	0B06142A	TR 2SC2240 (BL)
Q145	0B06257A	FET 2SK240 (GR,BL,V)
Q146	0B06142A	TR 2SC2240 (BL)
Q147,148	0B10050A	TR 2SA970 (BL)
Q149	0B10050A	TR 2SA970 (BL)
Q150	0B06142A	TR 2SC2240 (BL)
Q151	0B10204A	TR 2SA1145 (O,Y)
Q152	0B06142A	TR 2SC2240 (BL)
Q153	0B10205A	TR 2SC2705 (O,Y)
Q154	0B10050A	TR 2SA970 (BL)
Q155	0B10215A	TR 2SC1627A
Q156	0B10050A	TR 2SA970 (BL)
Q157	0B10169A	FET 2SJ74 (BL)
Q158	0B10214A	TR 2SA817A
Q159	0B06142A	TR 2SC2240 (BL)
Q160	0B10112A	FET 2SK170 (BL)
Q242	0B10050A	TR 2SA970 (BL)
Q243,244	0B06142A	TR 2SC2240 (BL)
Q245	0B06257A	FET 2SK240 (GR,BL,V)
Q246	0B06142A	TR 2SC2240 (BL)
Q247,248	0B10050A	TR 2SA970 (BL)
Q249	0B10050A	TR 2SA970 (BL)
Q250	0B06142A	TR 2SC2240 (BL)
Q251	0B10204A	TR 2SA1145 (O,Y)
Q252	0B06142A	TR 2SC2240 (BL)
Q253	0B10205A	TR 2SC2705 (O,Y)
Q254	0B10050A	TR 2SA970 (BL)
Q255	0B10215A	TR 2SC1627A
Q256	0B10050A	TR 2SA970 (BL)
Q257	0B10169A	FET 2SJ74 (BL)
Q258	0B10214A	TR 2SA817A
Q259	0B06142A	TR 2SC2240 (BL)
Q260	0B10112A	FET 2SK170 (BL)
ZD108	0B12168A	ZD 10V RD10JS-T1B2
ZD109,110	0B12183A	ZD 16V RD16JS-T1B2
ZD208	0B12168A	ZD 10V RD10JS-T1B2
ZD209,210	0B12183A	ZD 16V RD16JS-T1B2
D115,116	0B06398A	SiD 1SS176
D117,118	0B06398A	SiD 1SS176
D119,120	0B06398A	SiD 1SS176
D121,122	0B06398A	SiD 1SS176
D123,124	0B06398A	SiD 1SS176
D215,216	0B06398A	SiD 1SS176
D217,218	0B06398A	SiD 1SS176
D219,220	0B06398A	SiD 1SS176
D221,222	0B06398A	SiD 1SS176
D223,224	0B06398A	SiD 1SS176
VR105	0B32023A	Semi VR 22K H0621A
VR205	0B32023A	Semi VR 22K H0621A
R157	0B20214A	RK 100 1/2W G
R158	0B20158A	RK 274 1/2W F
R159	0B20352A	RK 75K 1/2W G
R160	0B09492A	RM 1.62K 1/4W F
R161	0B09491A	RM 1K 1/4W F
R162	0B22643A	RM 47.5 1/4W F (Except CA-50II)
R162	0B22567A	RM 100 1/4W F (CA-50II)
R163	0B09492A	RM 1.62K 1/4W F
R164	0B22757A	RM 158 1/4W F
R165	0B09446A	RM 33.2K 1/4W F
R166	0B20431A	RK 1.6K 1/2W J
R167	0B22567A	RM 100 1/4W F
R168	0B22705A	RM 226 1/4W F
R169,170	0B09760A	RM 332 1/4W F
R171,172	0B09760A	RM 332 1/4W F
R173,174	0B09760A	RM 332 1/4W F
R175,176	0B09502A	RM 1M 1/4W F
R177	0B09756A	RM 330K 1/4W F
R178	0B09523A	RM 13.7K 1/4W F (Except CA-50II)
R178	0B20331A	RK 27.4K 1/2W G (CA-50II)
R179	0B09230A	RM 1.5K 1/4W F
R180	0B09523A	RM 13.7K 1/4W F (Except CA-50II)
R181	0B20287A	RK 3.32K 1/2W G
R182	0B20214A	RK 100 1/2W G
R183,184	0B22642A	RM 221 1/4W F
R185	0B09305A	RM 100K 1/4W F
R188	0B09585A	RM 2.10K 1/4W F
R189	0B22263A	RM 2.10K 1/4W F
R190	0B20432A	RK 13K 1/2W J (Except CA-50II)
R257	0B20214A	RK 100 1/2W G
R258	0B20158A	RK 274 1/2W F
R259	0B20352A	RK 75K 1/2W G
R260	0B09492A	RM 1.62K 1/4W F
R261	0B09491A	RM 1K 1/4W F
R262	0B22643A	RM 47.5 1/4W F (Except CA-50II)
R262	0B22567A	RM 100 1/4W F (CA-50II)
R263	0B09492A	RM 1.62K 1/4W F
R264	0B22757A	RM 158 1/4W F
R265	0B09446A	RM 33.2K 1/4W F
R266	0B20431A	RK 1.6K 1/2W J
R267	0B22567A	RM 100 1/4W F
R268	0B22705A	RM 226 1/4W F
R269,270	0B09760A	RM 332 1/4W F
R271,272	0B09760A	RM 332 1/4W F
R273,274	0B09760A	RM 332 1/4W F
R275,276	0B09502A	RM 1M 1/4W F
R277	0B09756A	RM 330K 1/4W F
R278	0B09523A	RM 13.7K 1/4W F (Except CA-50II)
R278	0B20331A	RK 27.4K 1/2W G (CA-50II)
R279	0B09230A	RM 1.5K 1/4W F
R280	0B09523A	RM 13.7K 1/4W F (Except CA-50II)
R281	0B20287A	RK 3.32K 1/2W G
R282	0B20214A	RK 100 1/2W G
R283,284	0B22642A	RM 221 1/4W F
R285	0B09305A	RM 100K 1/4W F
R288	0B09585A	RM 2.10K 1/4W F
R289	0B22263A	RM 2.10K 1/4W F
R290	0B20432A	RK 13K 1/2W J (Except CA-50II)
C113	0B41764A	CSP 100P 160V J (CA-5EII (Germany))
C114	0B41816A	CSP 220P 160V J
C115	0B41718A	CSP 4700P 160V J
C116	0B41764A	CSP 100P 160V J (Except CA-50II)
C116	0B41765A	CSP 200P 160V J (CA-50II)
C117	0B41822A	CMM 0.47μ 50V J
C118	0B41821A	CMM 0.22μ 50V J
C120	0B41754A	CSP 150P 160V J
C213	0B41764A	CSP 100P 160V J (CA-5EII (Germany))
C214	0B41816A	CSP 220P 160V J
C215	0B41718A	CSP 4700P 160V J
C216	0B41764A	CSP 100P 160V J (Except CA-50II)
C216	0B41765A	CSP 200P 160V J (CA-50II)
C217	0B41822A	CMM 0.47μ 50V J
C218	0B41821A	CMM 0.22μ 50V J
C220	0B41754A	CSP 150P 160V J
	— DC Supply —	
Q401	0B10172A	TR 2SC3179
Q402	0B10050A	TR 2SA970 (BL)
Q403,404	0B06142A	TR 2SC2240 (BL)
Q405	0B10171A	TR 2SA1262
Q406	0B06142A	TR 2SC2240 (BL)
Q407	0B10050A	TR 2SA970 (BL)
Q408	0B10050A	TR 2SA970 (BL)
ZD401,402	0B12200A	ZD 30V RD30JS-T1B1
D401,402	0B12102A	SiD 10DF2
D403,404	0B12102A	SiD 10DF2
D409,410	0B06398A	SiD 1SS176
D411,412	0B06398A	SiD 1SS176
R401	0B09305A	RM 100K 1/4W F
R402	0B09760A	RM 332 1/4W F
R403	0B22567A	RM 100 1/4W F
R404	0B24109A	RF 2.2 1/2W J
R405	0B09760A	RM 332 1/4W F
R406	0B22567A	RM 100 1/4W F
R407	0B24109A	RF 2.2 1/2W J
C401,402	0B40456A	CE 3900μ 50V
C403,404	0B41196A	CSP 470P 160V J
C405,406	0B41715A	CML 0.47μ 100V K
F401,402	0B90226A	Fuse 1.6A 250V (CA-5II (Other), CA-5AII & CA-50II)
F401,402	0B90282A	Fuse T800mA (CA-5II (Australia & Saudi Arabia) & CA-5EII)
	0M05061A	Fuse Label (CA-5II (Australia & Saudi Arabia) & CA-5EII) (1)
	0B83117A	3P Terminal S-430 (1)
	0E03395A	M3x8 ⊕ Binding (Copper) (2)
	0J05410A	Heat Sink SDA (2)
	— Mute —	
Q409,410	0B06142A	TR 2SC2240 (BL)
Q411,412	0B10050A	TR 2SA970 (BL)
Q413,414	0B06142A	TR 2SC2240 (BL)
Q415,416	0B06142A	TR 2SC2240 (BL)
ZD403	0B12174A	ZD 12V RD12JS-T1B2
ZD404	0B12196A	ZD 24V RD24JS-T1B3
D405,406	0B12252A	SiD S5500D
D407,408	0B12252A	SiD S5500D
R408	0B05776A	RK 1M 1/4W J
R409	0B05776A	RK 1M 1/4W J
R410,411	0B05623A	RK 1.2K 1/4W J
R412	0B05776A	RK 1M 1/4W J
R413	0B01889A	RK 100K 1/4W J
R414	0B05640A	RK 180K 1/4W J
R415	0B01857A	RK 1K 1/4W J
R416	0B05776A	RK 1M 1/4W J
R417,418	0B05615A	RK 22K 1/4W J
R419	0B24152A	Fuse Resistor 150 1/6W
R420	0B01679A	RK 100 1/4W J
R421	0B09216A	RF 10 1/4W J
R422	0B01888A	RK 10K 1/4W J
R423	0B05509A	RK 33K 1/4W J
C411,412	0B40398A	CE 10μ 25V (LN)
C413	0B41821A	CMM 0.22μ 50V J
C414	0B40467A	CE 47μ 25V (LN)
C415	0B40469A	CE 47μ 50V (LN)
	— Relay Drive —	
IP401,402	0B11248A	IC Protector ICP-N5-T104
Q301	0B06451A	TR 2SB1015 (Y)
Q302	0B06452A	TR 2SD1406 (Y)
Q303	0B10112A	FET 2SK170 (BL)
Q304	0B10169A	FET 2SJ74 (BL)
Q305,306	0B01872A	TR 2SC945 (L)
Q307,308	0B01872A	TR 2SC945 (L)
Q309,310	0B01872A	TR 2SC945 (L)
Q311,312	0B01872A	TR 2SC945 (L)
Q313,314	0B01872A	TR 2SC945 (L)
Q315,316	0B01872A	TR 2SC945 (L)
Q317,318	0B01872A	TR 2SC945 (L)
Q319,320	0B01872A	TR 2SC945 (L)
Q321,322	0B01872A	TR 2SC945 (L)
Q323,324	0B01872A	TR 2SC945 (L)
Q325,326	0B01872A	TR 2SC945 (L)
ZD301,302	0B12174A	ZD 12V RD12JS-T1B2
D301,302	0B06181A	SiD 1SS53
D303,304	0B06181A	SiD 1SS53
D305,306	0B06181A	SiD 1SS53
D307,308	0B06181A	SiD 1SS53
D309,310	0B06181A	SiD 1SS53
D311	0B06181A	SiD 1SS53
RL301,302	0B90279A	Relay DS2Y-S-DC24V
RL303,304	0B90279A	Relay DS2Y-S-DC24V
RL305,306	0B90279A	Relay DS2Y-S-DC24V
RL307,308	0B90279A	Relay DS2Y-S-DC24V
RL309,310	0B90	
RL311	0B90	
R301,302	0B0	
R303,304	0B0	
R305,306	0B0	
R307,308	0B0	
R309,310	0B0	
R311,312	0B0	
R313,314	0B0	
R326	0B0	
R328,329	0B0	
C302,303	0B4	
C304,305	0B4	
C306,307	0B4	
C308,309	0B4	
C310	0B4	
C311	0B4	
C312,313	0B4	
	— Mi	
	0B6	
TP101,102	0B8	
TP103	0B8	
TP201,202	0B8	
TP203	0B8	
CN1,2	0B8	
CN3	0B8	
CN4	0B8	
CN5	0B8	
CN6	0B8	
CN9,10	0B8	
CN11,12	0B8	
FC101,201	0B8	
FC301,302	0B8	
FC303,304	0B8	
FC305	0B8	
FC306	0B8	
	0B8	
	0B9	
	0B9	
FC101(1/2)	0B8	
FC101(2/2)	0B8	
FC201(1/2)	0B8	
FC201(2/2)	0B8	
FC301(1/2)	0B8	
FC301(2/2)	0B8	
FC302(1/2)	0B8	
FC302(2/2)	0B8	
FC303	0B8	
FC304	0B8	
FC305	0B8	
FC306	0B8	
	0B8	

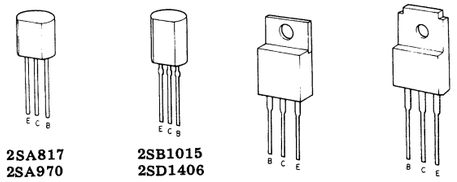
Part No.	Description	Schematic Ref. No.
— Line Amp. —		
0B11253A	IC μPC811C	R181
0B11253A	IC μPC811C	R182
0B10050A	TR 2SA970 (BL)	R183,184
0B06142A	TR 2SC2240 (BL)	R185
0B06257A	FET 2SK240 (GR,BL,V)	R188
0B06142A	TR 2SC2240 (BL)	R189
0B10050A	TR 2SA970 (BL)	R190
0B10050A	TR 2SA970 (BL)	R257
0B06142A	TR 2SC2240 (BL)	R258
0B10204A	TR 2SA1145 (O,Y)	R259
0B06142A	TR 2SC2240 (BL)	R260
0B10205A	TR 2SC2705 (O,Y)	R261
0B10050A	TR 2SA970 (BL)	R262
0B10215A	TR 2SC1627A	
0B10050A	TR 2SA970 (BL)	R263
0B10169A	FET 2SJ74 (BL)	R264
0B10214A	TR 2SA817A	R265
0B06142A	TR 2SC2240 (BL)	R266
0B10112A	FET 2SK170 (BL)	R267
0B10050A	TR 2SA970 (BL)	R268
0B06142A	TR 2SC2240 (BL)	R269,270
0B06257A	FET 2SK240 (GR,BL,V)	R271,272
0B06142A	TR 2SC2240 (BL)	R273,274
0B10050A	TR 2SA970 (BL)	R275,276
0B10050A	TR 2SA970 (BL)	R277
0B06142A	TR 2SC2240 (BL)	R278
0B10204A	TR 2SA1145 (O,Y)	
0B06142A	TR 2SC2240 (BL)	
0B10205A	TR 2SC2705 (O,Y)	R279
0B10050A	TR 2SA970 (BL)	R280
0B10215A	TR 2SC1627A	
0B10050A	TR 2SA970 (BL)	R281
0B10169A	FET 2SJ74 (BL)	R282
0B10214A	TR 2SA817A	R283,284
0B06142A	TR 2SC2240 (BL)	R285
0B10112A	FET 2SK170 (BL)	R288
0B12168A	ZD 10V RD10JS-T1B2	R289
0B12183A	ZD 16V RD16JS-T1B2	R290
0B12168A	ZD 10V RD10JS-T1B2	C113
0B12183A	ZD 16V RD16JS-T1B2	C114
0B06398A	SiD 1SS176	C115
0B06398A	SiD 1SS176	C116
0B06398A	SiD 1SS176	
0B06398A	SiD 1SS176	C116
0B06398A	SiD 1SS176	
0B06398A	SiD 1SS176	C117
0B06398A	SiD 1SS176	C118
0B06398A	SiD 1SS176	C120
0B06398A	SiD 1SS176	C213
0B06398A	SiD 1SS176	
0B06398A	SiD 1SS176	
0B32023A	Semi VR 22K H0621A	C214
0B32023A	Semi VR 22K H0621A	C215
0B20214A	RK 100 1/2W G	C216
0B20158A	RK 274 1/2W F	
0B20352A	RK 75K 1/2W G	C217
0B09492A	RM 1.62K 1/4W F	C218
0B09491A	RM 1K 1/4W F	C220
0B22643A	RM 47.5 1/4W F (Except CA-50II)	
0B22567A	RM 100 1/4W F (CA-50II)	
0B09492A	RM 1.62K 1/4W F	Q401
0B09446A	RM 33.2K 1/4W F	Q402
0B22757A	RM 158 1/4W F	Q403,404
0B20431A	RK 1.6K 1/2W J	Q405
0B22567A	RM 100 1/4W F	Q406
0B22705A	RM 226 1/4W F	Q407
0B09760A	RM 332 1/4W F	Q408
0B09760A	RM 332 1/4W F	ZD401,402
0B09760A	RM 332 1/4W F	
0B09502A	RM 1M 1/4W F	D401,402
0B09756A	RM 330K 1/4W F	D403,404
0B09523A	RM 13.7K 1/4W F (Except CA-50II)	D409,410
0B20331A	RK 27.4K 1/2W G (CA-50II)	D411,412
0B09230A	RM 1.5K 1/4W F	R401
0B09523A	RM 13.7K 1/4W F (Except CA-50II)	R402
		R403
		R404
		R405

Part No.	Description	Schematic Ref. No.
0B20287A	RK 3.32K 1/2W G	R406
0B20214A	RK 100 1/2W G	R407
0B22642A	RM 221 1/4W F	C401,402
0B09305A	RM 100K 1/4W F	C403,404
0B09585A	RM 2.10K 1/4W F	C405,406
0B22263A	RM 2.10K 1/4W F	F401,402
0B20432A	RK 13K 1/2W J (Except CA-50II)	
0B20214A	RK 100 1/2W G	
0B20158A	RK 274 1/2W F	F401,402
0B20352A	RK 75K 1/2W G	
0B09492A	RM 1.62K 1/4W F	
0B09491A	RM 1K 1/4W F	
0B22643A	RM 47.5 1/4W F (Except CA-50II)	
0B22567A	RM 100 1/4W F (CA-50II)	
0B09492A	RM 1.62K 1/4W F	
0B22757A	RM 158 1/4W F	
0B09446A	RM 33.2K 14W F	
0B20431A	RK 1.6K 1/2W J	
0B09756A	RM 330K 1/4W F	
0B09523A	RM 13.7K 1/4W F (Except CA-50II)	
0B20331A	RK 27.4K 1/2W G (CA-50II)	
0B09230A	RM 1.5K 1/4W F	
0B09523A	RM 13.7K 1/4W F (Except CA-50II)	
0B20287A	RK 3.32K 1/2W G	
0B20214A	RK 100 1/2W G	
0B22642A	RM 221 1/4W F	
0B09305A	RM 100K 1/4W F	
0B09585A	RM 2.10K 1/4W F	
0B22263A	RM 2.10K 1/4W F	
0B20432A	RK 13K 1/2W J (Except CA-50II)	
0B41764A	CSP 100P 160V J (CA-5EII (Germany))	
0B41816A	CSP 220P 160V J	
0B41718A	CSP 4700P 160V J	
0B41764A	CSP 100P 160V J (Except CA-50II)	
0B41765A	CSP 200P 160V J (CA-50II)	
0B41822A	CMM 0.47μ 50V J	
0B41821A	CMM 0.22μ 50V J	
0B41754A	CSP 150P 160V J	
0B41764A	CSP 100P 160V J (CA-5EII (Germany))	
0B41816A	CSP 220P 160V J	
0B41718A	CSP 4700P 160V J	
0B41764A	CSP 100P 160V J (Except CA-50II)	
0B41765A	CSP 200P 160V J (CA-50II)	
0B41822A	CMM 0.47μ 50V J	
0B41821A	CMM 0.22μ 50V J	
0B41754A	CSP 150P 160V J	
— DC Supply —		
0B10172A	TR 2SC3179	
0B10050A	TR 2SA970 (BL)	
0B06142A	TR 2SC2240 (BL)	
0B10171A	TR 2SA1262	
0B06142A	TR 2SC2240 (BL)	
0B10050A	TR 2SA970 (BL)	
0B10050A	TR 2SA970 (BL)	
0B12200A	ZD 30V RD30JS-T1B1	
0B12102A	SiD 10DF2	
0B12102A	SiD 10DF2	
0B06398A	SiD 1SS176	
0B06398A	SiD 1SS176	
0B09305A	RM 100K 1/4W F	
0B09760A	RM 332 1/4W F	
0B22567A	RM 100 1/4W F	
0B24109A	RF 2.2 1/2W J	
0B09760A	RM 332 1/4W F	

Part No.	Description	Schematic Ref. No.
0B22567A	RM 100 1/4W F	
0B24109A	RF 2.2 1/2W J	
0B40456A	CE 3900μ 50V	
0B41196A	CSP 470P 160V J	
0B41715A	CML 0.47μ 100V K	
0B90226A	Fuse 1.6A 250V (CA-5II (Other), CA-5AII & CA-50II)	
0B90282A	Fuse T800mA (CA-5II (Australia & Saudi Arabia) & CA-5EII)	
0M05061A	Fuse Label (CA-5II (Australia & Saudi Arabia) & CA-5EII) (1)	
0B83117A	3P Terminal S-430 (1)	
0E03395A	M3x8 ⊕ Binding (Copper) (2)	
0J05410A	Heat Sink SDA (2)	
— Mute —		
0B06142A	TR 2SC2240 (BL)	Q409,410
0B10050A	TR 2SA970 (BL)	Q411,412
0B06142A	TR 2SC2240 (BL)	Q413,414
0B06142A	TR 2SC2240 (BL)	Q415,416
0B12174A	ZD 12V RD12JS-T1B2	ZD403
0B12196A	ZD 24V RD24JS-T1B3	ZD404
0B12252A	SiD S5500D	D405,406
0B12252A	SiD S5500D	D407,408
0B05776A	RK 1M 1/4W J	R408
0B05776A	RK 1M 1/4W J	R409
0B05623A	RK 1.2K 1/4W J	R410,411
0B05776A	RK 1M 1/4W J	R412
0B01889A	RK 100K 1/4W J	R413
0B05640A	RK 180K 1/4W J	R414
0B01857A	RK 1K 1/4W J	R415
0B05776A	RK 1M 1/4W J	R416
0B05615A	RK 22K 1/4W J	R417,418
0B24152A	Fuse Resistor 150 1/6W	R419
0B01679A	RK 100 1/4W J	R420
0B09216A	RF 10 1/4W J	R421
0B01888A	RK 10K 1/4W J	R422
0B05509A	RK 33K 1/4W J	R423
0B40398A	CE 10μ 25V (LN)	C411,412
0B41821A	CMM 0.22μ 50V J	C413
0B40467A	CE 47μ 25V (LN)	C414
0B40469A	CE 47μ 50V (LN)	C415
— Relay Drive —		
0B11248A	IC Protector ICP-N5-T104	IP401,402
0B06451A	TR 2SB1015 (Y)	Q301
0B06452A	TR 2SD1406 (Y)	Q302
0B10112A	FET 2SK170 (BL)	Q303
0B10169A	FET 2SJ74 (BL)	Q304
0B01872A	TR 2SC945 (L)	Q305,306
0B01872A	TR 2SC945 (L)	Q307,308
0B01872A	TR 2SC945 (L)	Q309,310
0B01872A	TR 2SC945 (L)	Q311,312
0B01872A	TR 2SC945 (L)	Q313,314
0B01872A	TR 2SC945 (L)	Q315,316
0B01872A	TR 2SC945 (L)	Q317,318
0B01872A	TR 2SC945 (L)	Q319,320
0B01872A	TR 2SC945 (L)	Q321,322
0B01872A	TR 2SC945 (L)	Q323,324
0B01872A	TR 2SC945 (L)	Q325,326
0B12174A	ZD 12V RD12JS-T1B2	ZD301,302
0B06181A	SiD 1SS53	D301,302
0B06181A	SiD 1SS53	D303,304
0B06181A	SiD 1SS53	D305,306
0B06181A	SiD 1SS53	D307,308
0B06181A	SiD 1SS53	D309,310
0B06181A	SiD 1SS53	D311
0B90279A	Relay DS2Y-S-DC24V	RL301,302
0B90279A	Relay DS2Y-S-DC24V	RL303,304
0B90279A	Relay DS2Y-S-DC24V	RL305,306
0B90279A	Relay DS2Y-S-DC24V	RL307,308

Part No.	Description	Schematic Ref. No.
0B90279A	Relay DS2Y-S-DC24V	RL309,310
0B90279A	Relay DS2Y-S-DC24V	RL311
0B01888A	RK 10K 1/4W J	R301,302
0B05776A	RK 1M 1/4W J	R303,304
0B01889A	RK 100K 1/4W J	R305,306
0B01889A	RK 100K 1/4W J	R307,308
0B01889A	RK 100K 1/4W J	R309,310
0B01889A	RK 100K 1/4W J	R311,312
0B01889A	RK 100K 1/4W J	R313,314
0B05776A	RK 1M 1/4W J	R326
0B01887A	RK 5.6K 1/4W J	R328,329
0B41823A	CMM 0.01μ 50V J	C302,303
0B41823A	CMM 0.01μ 50V J	C304,305
0B41823A	CMM 0.01μ 50V J	C306,307
0B41823A	CMM 0.01μ 50V J	C308,309
0B41823A	CMM 0.01μ 50V J	C310
0B41400A	CPP 390P 50V J	C311
0B41820A	CMM 0.1μ 50V J	C312,313
— Miscellaneous —		
0B60506B	Main P.C.B.	
0B81117A	1P Test Pin RT-01T-1.0B	TP101,102
0B81117A	1P Test Pin RT-01T-1.0B	TP103
0B81117A	1P Test Pin RT-01T-1.0B	TP201,202
0B81117A	1P Test Pin RT-01T-1.0B	TP203
0B81223A	2P-T Post WHT	CN1,2
0B83149A	Monitor Cord Ass'y	CN3
0B81255A	10P-T Post WHT	CN4
0B81223A	2P-T Post WHT	CN5
0B81224A	2P-T Post BLK	CN6
0B81770A	2P-T Post	CN9,10
0B81770A	2P-T Post	CN11,12
0B81014A	7P Dip Mate WH7D-1	FC101,201
0B81019A	8P Dip Mate WH8D-1	FC301,302
0B81013A	6P Dip Mate WH6D-1	FC303,304
0B81011A	4P Dip Mate WH4D-1	FC305
0B81002A	2P Dip Mate WH2D-1	FC306
0B81117A	1P Test Pin RT-01T-1.0B (8)	
0B90277A	Fuse Clip UL (CA-5II (Other), CA-5AII & CA-50II) (4)	
0B90278A	Fuse Clip EP (CA-5II (Australia & Saudi Arabia) & CA-5EII) (4)	
0B83111A	Ribbon Cable 3P-100	FC101(1/2)
0B83113A	Ribbon Cable 4P 100	FC101(2/2)
0B83112A	Ribbon Cable 3P-130	FC201(1/2)
0B83114A	Ribbon Cable 4P-130	FC201(2/2)
0B83113A	Ribbon Cable 4P-100	FC301(1/2)
0B83114A	Ribbon Cable 4P-130	FC301(2/2)
0B83113A	Ribbon Cable 4P-100	FC302(1/2)
0B83113A	Ribbon Cable 4P-100	FC302(2/2)
0B83115A	Ribbon Cable 6P-140	FC303
0B83116A	Ribbon Cable 6P-200	FC304
0B83114A	Ribbon Cable 4P 130	FC305
0B83110A	Ribbon Cable 2P-140	FC306
0B83150A	Phono Ground Cord (1)	
0B83151A	Line Ground Cord (1)	

7. SCHEMATIC DIAGRAM

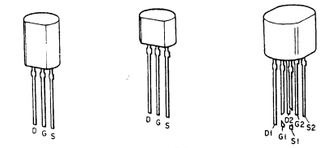


2SA817
2SA970
2SC945
2SC1627
2SC2240

2SB1015
2SD1406

2SA1145
2SC2705

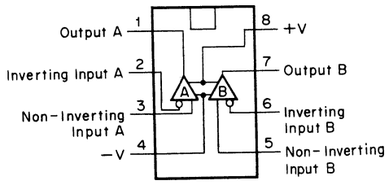
2SA1262
2SC3179



2SK147
2SJ72

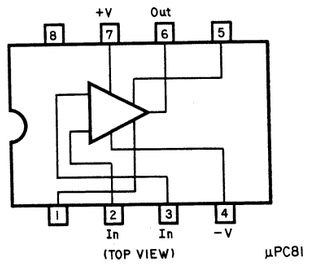
2SK170
2SJ74

2SK240



(TOP VIEW)

Operational Amp. IC NJM5532DD



Operational Amp. IC μPC811C

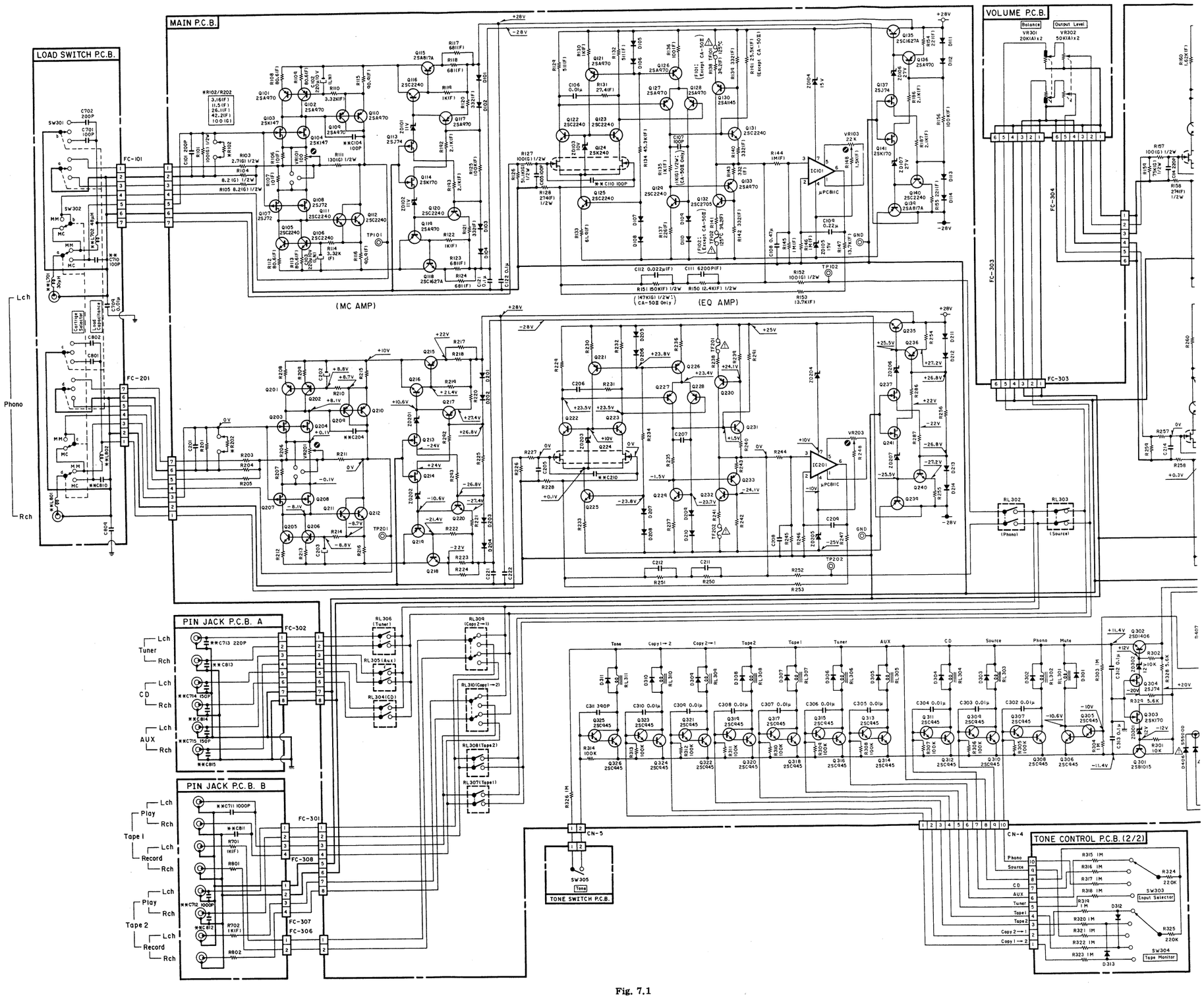


Fig. 7.1

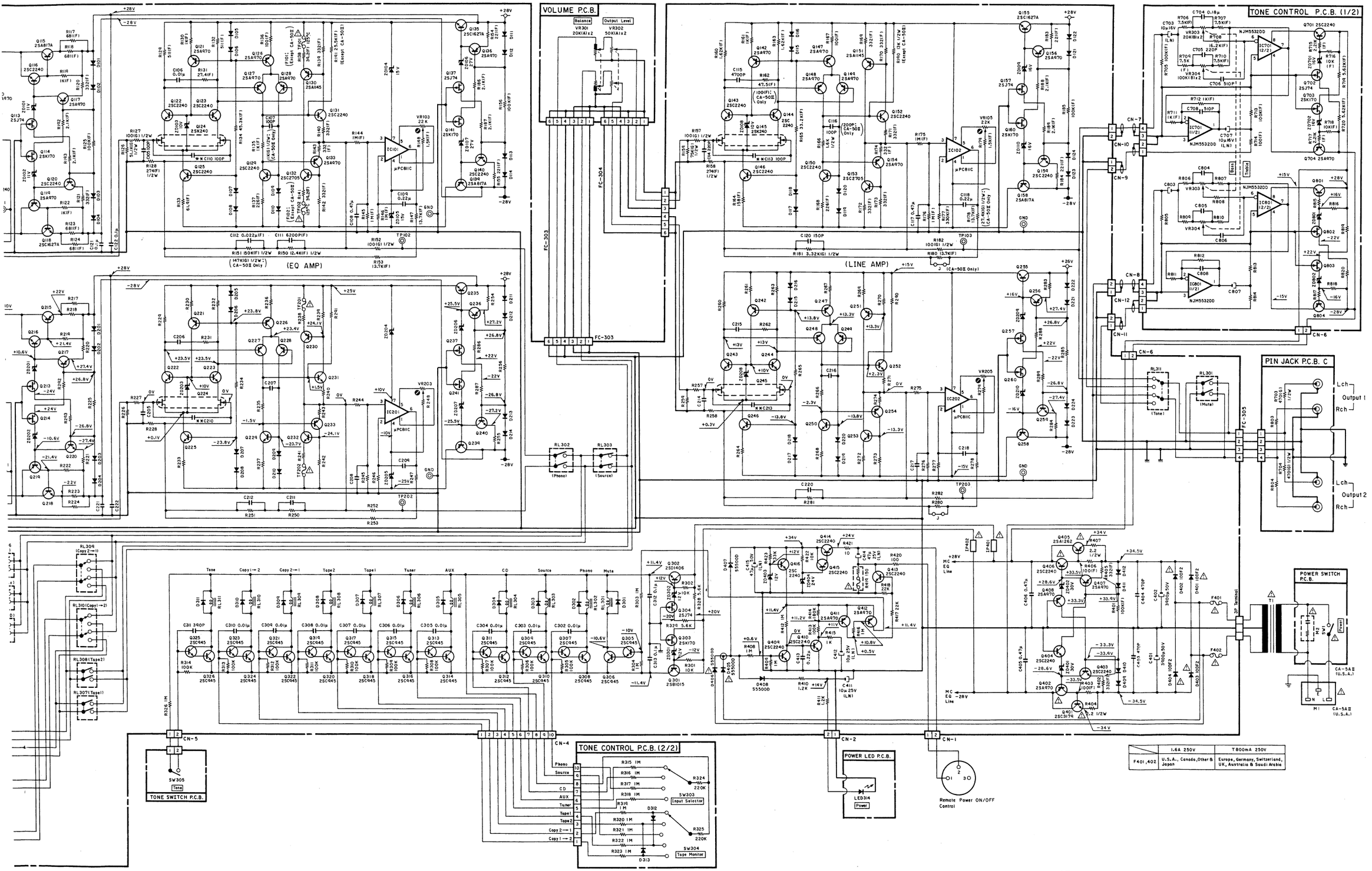
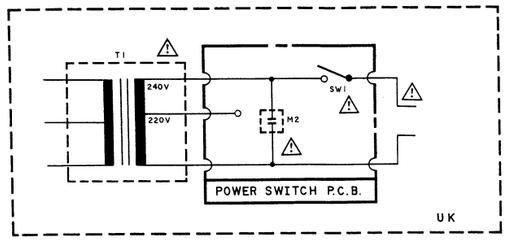
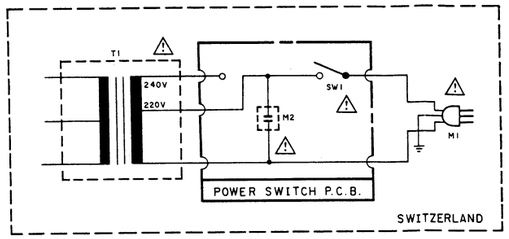
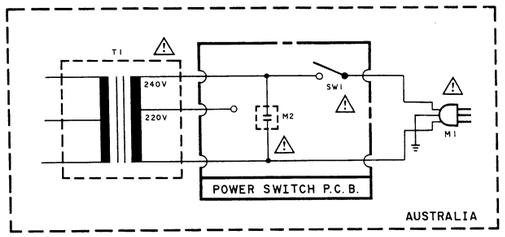
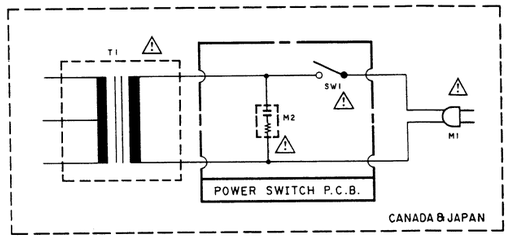

VOLUME P.C.B.
Balance
Output Level
VR301 20K(A)x2
VR302 50K(A)x2
FC-304
FC-303
(EQ AMP)
(LINE AMP)
TONE CONTROL P.C.B. (1/2)
NJM5532DD
Bass
Treble
PIN JACK P.C.B.
Lch Output 1 Rch
Lch Output 2 Rch
POWER SWITCH P.C.B.
CA-5A II (U.S.A.)
RL311 (Tone)
RL301 (Mute)
RL302 (Phono)
RL303 (Source)
RL309 (Copy 2→1)
RL310 (Copy 1→2)
RL308 (Tape 2)
RL307 (Tape 1)
Tone
Copy 1→2
Copy 2→1
Tape 2
Tape 1
Tuner
AUX
CD
Source
Phono
Mute
CN-1
CN-2
CN-4
CN-5
CN-6
CN-7
CN-8
CN-9
CN-10
CN-11
CN-12
FC-301
FC-302
FC-305
TONE SWITCH P.C.B.
SW305
Tone
TONE CONTROL P.C.B. (2/2)
SW303 Input Selector
SW304 Tape Monitor
POWER LED P.C.B.
LED314
Power
Remote Power ON/OFF Control
MC EQ Line
3P Terminal
T1
SW1
Power
F401
F402
CA-5A II (U.S.A.)
F401,402
1.6A 250V
U.S.A., Canada, Other S. Japan
T800mA 250V
Europe, Germany, Switzerland, UK, Australia & Saudi Arabia

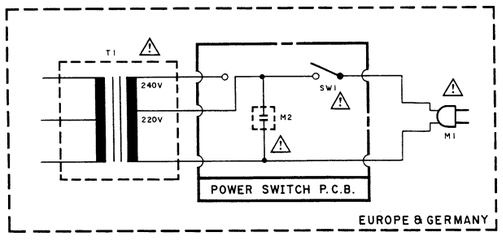
Fig. 7.1

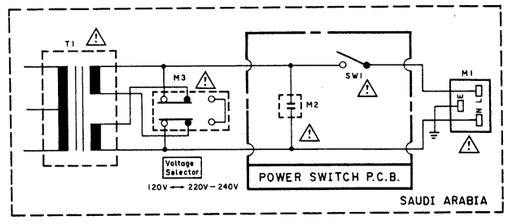












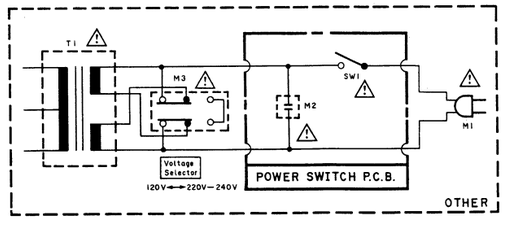


Fig. 7.2

Notes: 1. Diode is 1SS53, 1S1555, or 1SS176 unless otherwise specified.
2. Resistor and capacitor marked with * show typical value.
3. Parts marked with ** are mounted only for CA-5EII (Germany).
4. 2SC945, 2SC536SP, 2SC2458 and 2SC2785 are interchangeable with each other.

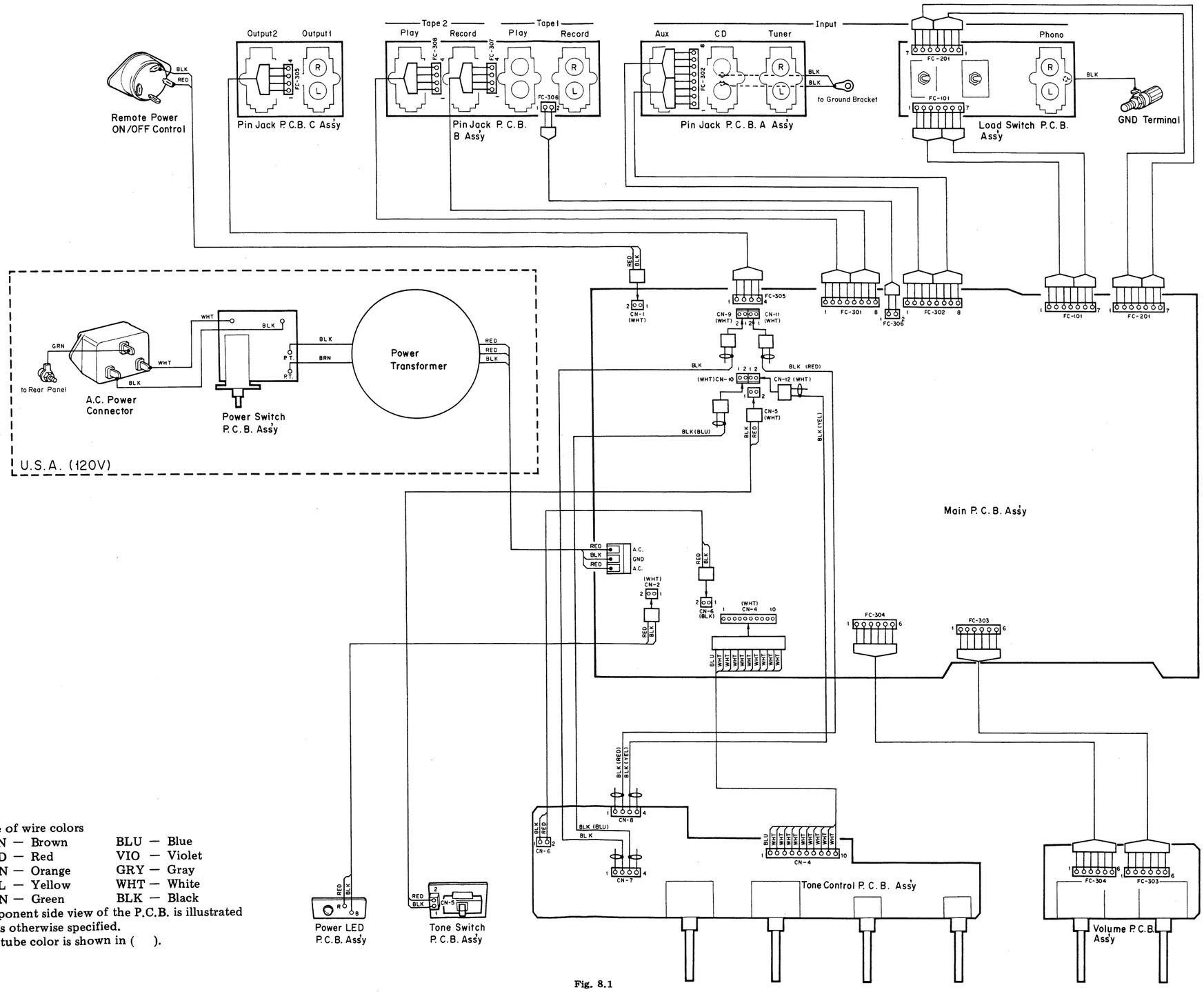
WARNING:

Parts marked with the symbol ⚠ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.
It is recommended that the unit be operated from a suitable DC supply or batteries during initial check-out procedures.

CAUTION:

Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamp, or if the resistance from chassis to either side of the power cord is less than 240 k ohms, the unit is defective.
WARNING — DO NOT return the unit to the customer until the problem is located and corrected.

8. WIRING DIAGRAM

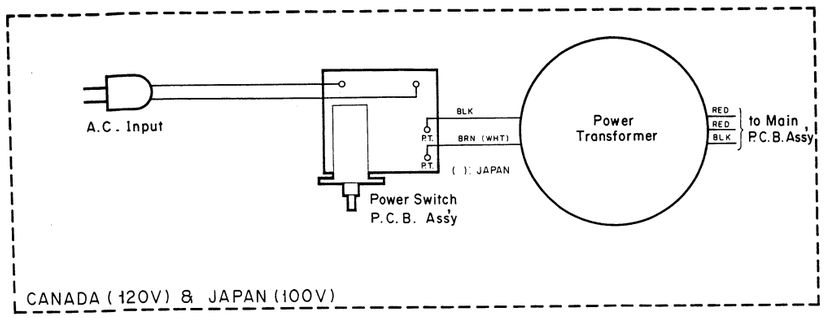


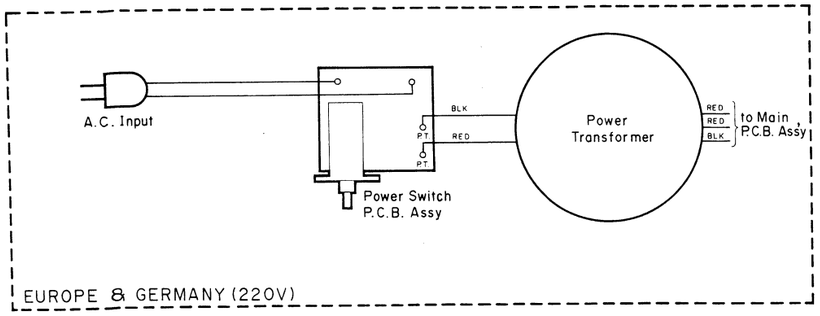
Notes: 1. Table of wire colors

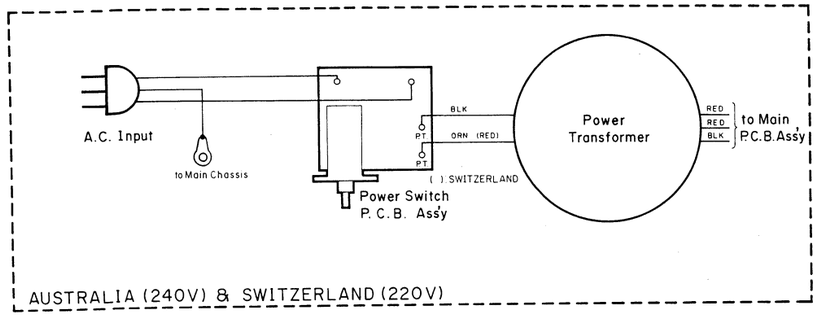
BRN	— Brown	BLU	— Blue
RED	— Red	VIO	— Violet
ORN	— Orange	GRY	— Gray
YEL	— Yellow	WHT	— White
GRN	— Green	BLK	— Black

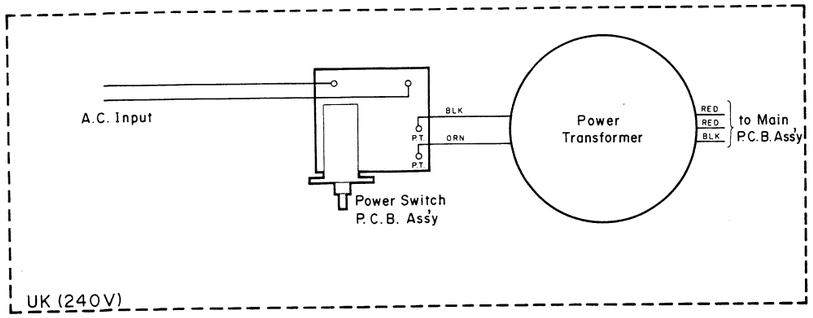
2. Component side view of the P.C.B. is illustrated unless otherwise specified.
3. Wire tube color is shown in ( ).

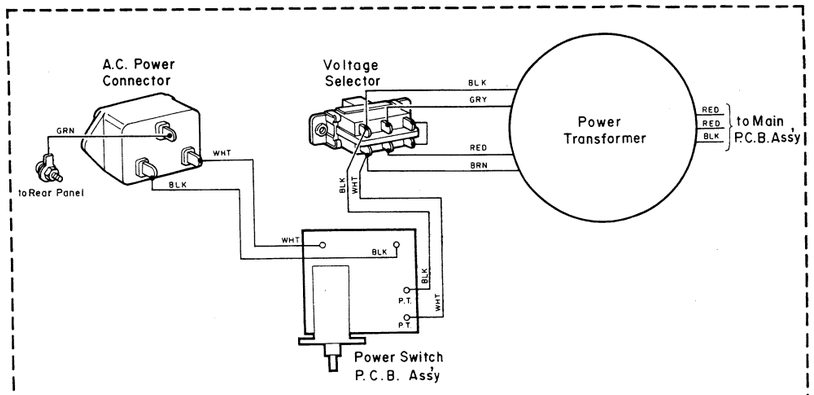
Fig. 8.1


A.C. Input
BLK
BRN (WHT)
( ): JAPAN
P.T.
P.T.
Power Switch
P.C.B. Ass'y
Power
Transformer
RED
RED
BLK
to Main
P.C.B.Ass'y
CANADA (120V) & JAPAN (100V)


A.C. Input
BLK
RED
P.T.
P.T.
Power Switch
P.C.B. Assy
Power
Transformer
RED
RED
BLK
to Main
P.C.B. Assy
EUROPE & GERMANY (220V)


A.C. Input
to Main Chassis
BLK
ORN (RED)
P.T.
P.T.
( ) SWITZERLAND
Power Switch
P.C.B. Ass'y
Power
Transformer
RED
RED
BLK
to Main
P.C.B.Ass'y
AUSTRALIA (240V) & SWITZERLAND (220V)


A.C. Input
BLK
ORN
P.T.
P.T.
Power Switch
P.C.B. Ass'y
Power
Transformer
RED
RED
BLK
to Main
P.C.B. Assy
UK (240V)


A.C. Power
Connector
GRN
toRear Panel
WHT
BLK
Voltage
Selector
BLK
GRY
RED
BRN
BLK
WHT
WHT
BLK
BLK
WHT
P.T.
P.T.
Power Switch
P.C.B. Ass'y
Power
Transformer
RED
RED
BLK
to Main
P.C.B.Ass'y
SAUDI ARABIA (120V/220 — 240V)

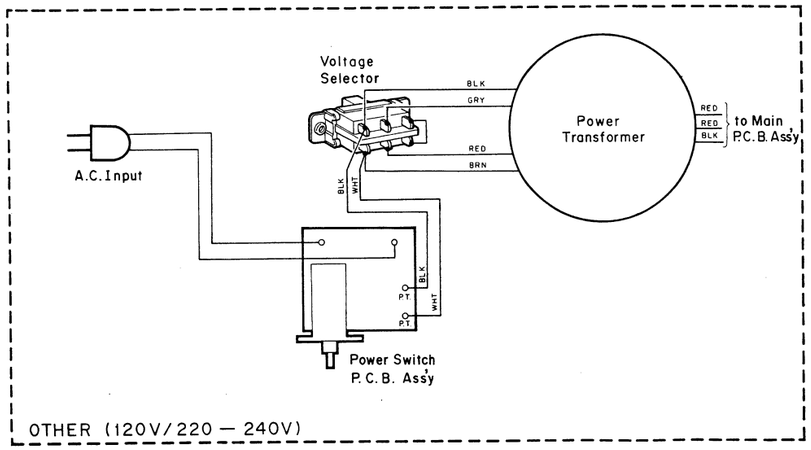

Voltage
Selector
BLK
GRY
RED
BRN
A.C. Input
BLK
WHT
BLK
WHT
P.T.
P.T.
Power Switch
P.C.B. Ass'y
Power
Transformer
RED
RED
BLK
to Main
P.C.B.Ass'y
OTHER (120V/220 — 240V)

Fig. 8.2

9. BLOCK DIAGRAM

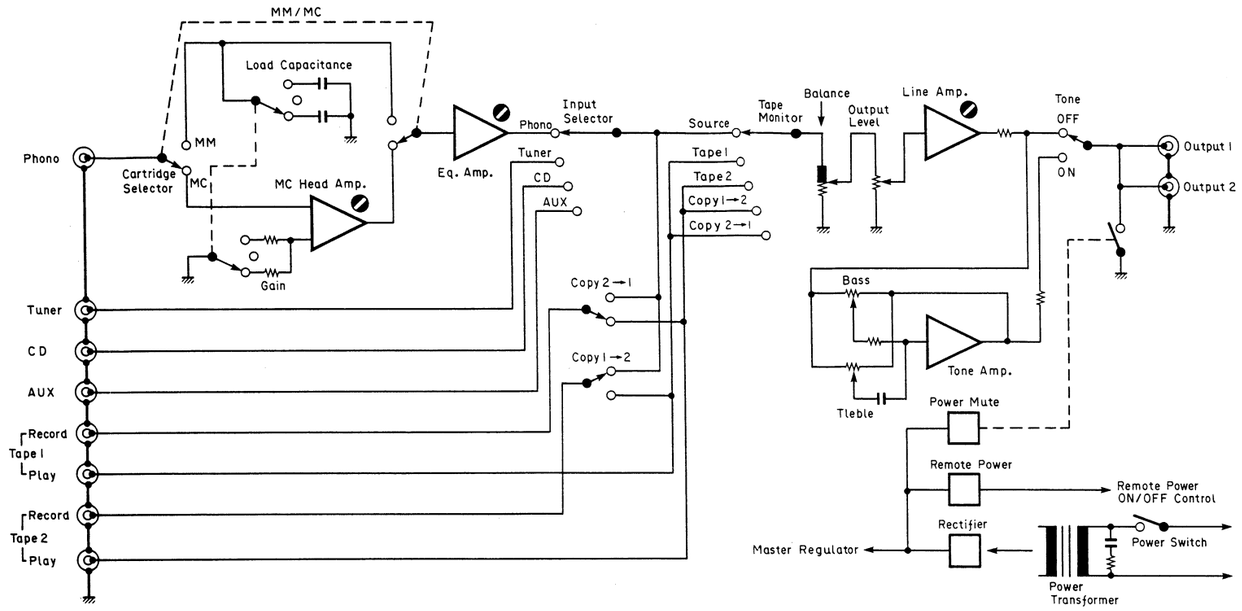


Fig. 9

10. SPECIFICATIONS

Input Sensitivity/Impedance
- Phono MC (36 dB Gain) . . . . . 45 μV/100 ohms
- (30 dB Gain) . . . . . 85 μV/100 ohms
- (24 dB Gain) . . . . . 165 μV/100 ohms
- Phono MM . . . . . 2.5 mV/50 kohms
- Tuner/CD/Aux/Tape . . . . . 150 mV/12.5 kohms

Input Sensitivity (New IHF)
- Phono MC (36 dB Gain) . . . . . 11.3 μV
- (30 dB Gain) . . . . . 21.3 μV
- (24 dB Gain) . . . . . 41.3 μV
- Phono MM . . . . . 0.63 mV
- Tuner/CD/Aux/Tape . . . . . 37.5 mV

Maximum Input Level (1 kHz, Non-Clipping Level, New IHF)
- Phono MC (36 dB Gain) . . . . . 4.5 mV
- (30 dB Gain) . . . . . 8.5 mV
- (24 dB Gain) . . . . . 16.5 mV
- Phono MM . . . . . 270 mV

Output Level/Impedance
- Pre Out . . . . . 2 V/1 kohms
- Rec Out . . . . . 150 mV/1 kohms

Maximum Output Level (20—20,000 Hz, 1% THD, Pre Out, New IHF)
. . . . . 7 V

Total Harmonic Distortion (20—20,000 Hz)
- Phono MC to Rec Out, 1 V
- (36 dB Gain) . . . . . Less than 0.005%
- (24 dB Gain) . . . . . Less than 0.004%
- Phono MM to Rec Out, 1 V . . . Less than 0.002%
- Tuner/CD/Aux/Tape to Pre Out, 2 V
. . . . . Less than 0.002%

Frequency Response
- Tuner/CD/Aux/Tape . . . . . 1—100,000 Hz +0, —3 dB
1—20,000 Hz +0, —2 dB

RIAA Deviation
- Phono MC . . . . . 20—20,000 Hz ±0.3 dB
- Phono MM . . . . . 20—20,000 Hz ±0.25 dB

Signal to Noise Ratio (IHF A-WTD)
- Phono MC (0.5 mV Input, 0.5 V Pre Out, Input Shorted)
- (36 dB Gain) . . . . . Better than 81 dB
- (30 dB Gain) . . . . . Better than 80 dB
- (24 dB Gain) . . . . . Better than 78 dB
- Phono MM (5 mV Input, 0.5 V Pre Out, Input Shorted)
. . . . . Better than 88 dB
- Tuner/CD/Aux/Tape (0.5 V Input, 0.5 V Pre Out, Input Shorted)
. . . . . Better than 95 dB

Stereo Separation (100 Hz/1 kHz/10 kHz)
- Phono MC (0.5 mV Input, 1 V Pre Out, Input Shorted)
- (36 dB Gain) . . . . . 93/85/65 dB
- (24 dB Gain) . . . . . 90/84/64 dB
- Phono MM (5 mV Input, 1 V Pre Out, Input Shorted)
. . . . . 100/84/64 dB
- Tuner/CD/Aux/Tape (0.5 V Input, 1 V Pre Out, Input Shorted)
. . . . . 110/95/75 dB

Tone Control Characteristics
- Bass . . . . . 20 Hz ±10 dB
- Treble . . . . . 20 kHz ±10 dB

Remote Power On/Off Control Output
. . . . . 24 V DC

Power Source . . . . . 120, 120/220—240, 220 or 240 V AC;
50/60 Hz (According to country of sale)

Power Consumption . . . . . 23 W max.

Dimensions . . . . . 435 (W) x 63 (H) x 287 (D) mm
17-1/8 (W) x 2-1/2 (H) x 11-5/16 (D) inches

Approximate Weight . . . . . 5.1 kg, 11 lbs. 4oz.

- Specifications and design are subject to change for further improvement without notice.

Service Manual

Nakamichi
CA-5II, CA-5AII, CA-5EII, CA-50II

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Nakamichi America Corporation — 19701 South Vermont Ave., Torrance, CA 90502 Phone: (213) 538-8150
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0006097A

O-871010A Printed in Japan

CA-5EII/CA-5AII/CA-5II Load Impedance Alteration
Abschlußimpedanz-Anpassung des CA-5EII/CA-5AII/CA-5II
Modification de l'impédance de charge du CA-5EII/CA-5AII/CA-5II

- For Dealers Only
- Nur für Händler
- Pour les distributeurs uniquement

The plastic bags contain five resistors each for the left and right channels. The load impedance when an MC-type cartridge is used can be altered by installing these resistors on the printed circuit boards in the CA-5EII/CA-5AII/CA-5II. (The load impedance is factory-set to 100 ohms.)
When wishing to make this alteration, contact your dealer. Never attempt to install the resistors yourself, as opening the unit involves a considerable risk of electric shock.

Die Plastiktüten enthalten je fünf Widerstände für rechten und linken Kanal. Bei Verwendung eines MC-Tonabnehmers kann die Lastimpedanz bei Bedarf durch Anbringen der Widerstände auf den Platinen des CA-5EII/CA-5AII/CA-5II verändert werden. (Die ab Werk eingestellte Impedanz beträgt 100 Ohm.)
Diese Anpassung darf nur durch autorisierte Händler durchgeführt werden, da bei Eingriffen in das Gerät Stromschlaggefahr besteht.

Les sacs en plastique contiennent chacun cinq résistances pour les canaux gauche et droit. Lors de l'utilisation d'une tête de lecture à bobine mobile, l'impédance de charge peut être modifiée en installant ces résistances sur les circuits imprimés du CA-5EII/CA-5AII/CA-5II. (L'impédance de charge est réglée sur 100 ohms à la sortie de l'usine.)
Lorsque vous désirez effectuer cette modification, contactez votre distributeur. Ne jamais essayer d'installer les résistances par vous-même car l'ouverture de cet appareil peut entraîner de forts risques d'électrocution.

■ Procedure for installing resistors

Two resistors (one each for left and right channel) must be soldered to the circuit boards, as shown in the illustration. Be sure to turn the power OFF and unplug the power cord before opening the unit.

- Select the resistors for the desired load impedance according to their color codes, as indicated in the table on the reverse side.
- Trim the resistor leads as shown on the reverse side. Then insert the leads into the gold-plated sockets on the input section of the MC head amplifier board and solder each resistor solidly in place. Make sure that equal resistor values are used for the two channels.
- The resistors may be mounted in either direction.

■ Einbau

Zwei Widerstände (je einer für rechten und linken Kanal) müssen an den dafür vorgesehenen Stellen auf die Schaltplatinen gelötet werden, wie in der Abbildung gezeigt.

- Wählen Sie die zur Erzielung der gewünschten Abschlußimpedanz erforderlichen Widerstände nach ihrer Farbkodierung aus, wie in der umseitigen Tabelle aufgeführt.
- Kürzen Sie die Anschlußdrähte der Widerstände, wie umseitig gezeigt, und stecken Sie die Drähte in die vergoldeten Ösen auf der Platine (Eingangsstufe des MC-Vorverstärkers). Löten Sie dann die Drähte gut an. Achten Sie darauf, gleiche Widerstandswerte für beide Kanäle zu verwenden.
- Die Ausrichtung der Widerstände ist beliebig.

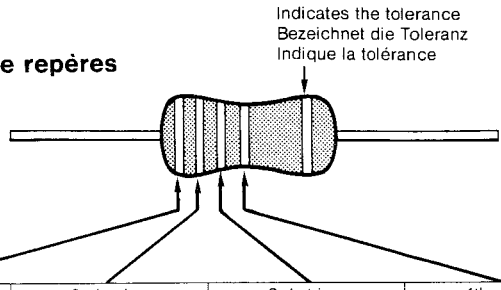
■ Pour l'installation des résistances

les 2 résistances (une pour le canal gauche et une pour le canal droit) doivent être soudées sur les panneaux des enceintes. Vérifier que le courant n'est pas allumé et que la prise d'alimentation soit débranchée avant d'ouvrir le couvercle de l'appareil.

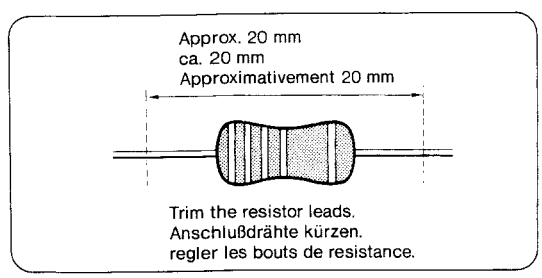
- Choisir les résistances suivant l'impédance de charge désirée en vous aidant des couleurs servant de repères, comme indiqué sur le tableau ci-après.
- Regler le bout des résistances comme indiqué au dos. Insérer ensuite les bouts dans les supports dorés dans la section d'entrée du pré-amplificateur et souder chaque résistance solidement à leur place. Vérifier que les résistances utilisées pour les deux courants soient de valeur égale.
- Les résistances peuvent être montées dans n'importe quel sens.

Desired load impedance Gewünschte Abschlußimpedanz Impédance de charge désirée	50 Ω	30 Ω	20 Ω	10 Ω	3 Ω
Resistor to install Einzulötender Widerstand Résistances à installer	100 Ω	42.2 Ω	26.1 Ω	11.5 Ω	3.16 Ω

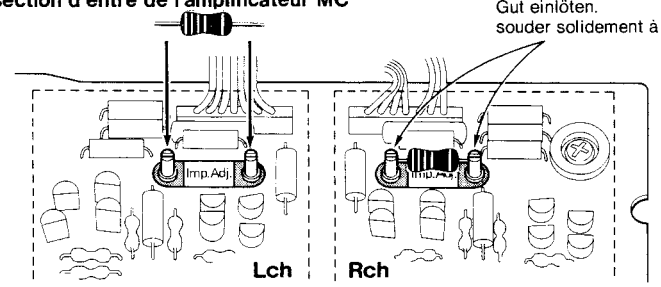
How to read the color code
Farbkennzeichnung
Comment lire les couleurs servant de repères

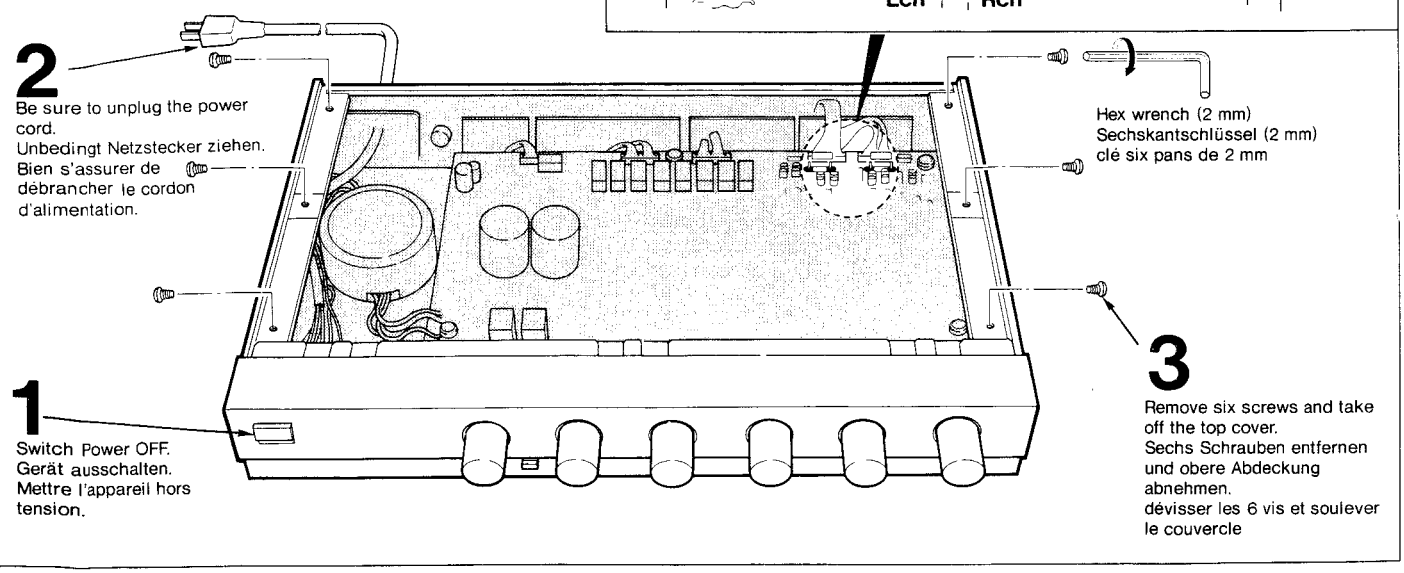


	1st stripe 1. Ring 1ère raie	2nd stripe 2. Ring 2ème raie	3rd stripe 3. Ring 3ème raie	4th stripe 4. Ring 4ème raie
100 Ω	Brown braun Marron	Black schwarz Noire	Brown braun Marron	—
42.2 Ω	Yellow gelb Jaune	Red rot Rouge	Red rot Rouge	Gold gold Dorée
26.1 Ω	Red rot Rouge	Blue blau Bleue	Brown braun Marron	Gold gold Dorée
11.5 Ω	Brown braun Marron	Brown braun Marron	Green grün Verte	Gold gold Dorée
3.16 Ω	Orange orange Orangée	Brown braun Marron	Blue blau Bleue	Silver silbern Argentée



MC head amp input section
Eingangsstufe des MC-Vorverstärkers
section d'entré de l'amplificateur MC




2
Be sure to unplug the power cord.
Unbedingt Netzstecker ziehen.
Bien s'assurer de débrancher le cordon d'alimentation.
Hex wrench (2 mm)
Sechskantschlüssel (2 mm)
clé six pans de 2 mm
1
Switch Power OFF.
Gerät ausschalten.
Mettre l'appareil hors tension.
3
Remove six screws and take off the top cover.
Sechs Schrauben entfernen und obere Abdeckung abnehmen.
dévisser les 6 vis et soulever le couvercle

Nakamichi

0D04792A

O-870805A Printed in Japan